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Foreword

Health, United States, 1981 is the sixth annual report on the health status of the Nation submitted by the Secretary of Health and Human Services to the President and Congress of the United States in compliance with Section 308 of the Public Health Service Act. It presents, in a single volume, statistics concerning recent trends in the health care sector and detailed discussion of selected current health issues.

This report was compiled by the National Center for Health Statistics with the assistance of the National Center for Health Services Research, Office of Health Research, Statistics, and Technology.

This report is divided into two parts. Part A consists of several analytic articles on selected topics of current interest in the health field. These articles are not intended to cover all the important health issues. Many significant topics are not addressed because of contraints in report size and data availibility. Part B consists of 79 detailed statistical tables that are organized around four major subject areas—health status and determinants, utilization of health resources, health care resources, and health care expenditures—and includes a guide to the detailed tables. There are also two appendixes that provide descriptions of the data sources and a glossary of terms.

This edition of *Health, United States* continues the approach used during the previous 2 years by emphasizing trends and comparisons over time. Once again, the detailed tables emphasize age-adjusted data. This was necessary for two reasons. First, the elderly constitute a growing proportion of the U.S. population and second, several demographic subgroups of the population have different age structures. By adjusting for age, data can be compared more easily over time and for different groups.

Acknowledgments

Overall responsibility for planning and coordinating the content of this volume rested with the Division of Analysis, National Center for Health Statistics, under the supervision of Jacob J. Feldman, Joel C. Kleinman, and Barbara G. Weichert. Coordination of those sections contributed by the National Center for Health Services Research was the responsibility of Donald E. Goldstone, Daniel C. Walden, and Gail R. Wilensky.

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The authors are identified in each article.

Contents

Foreword iii
Acknowledgments iv
Highlights 1

PART A: Selected Health Topics

Trends and Variations in Birth Weight 7
Mortality Among the Elderly 15
Prevalence and Management of Diabetes 25
Educational Differentials in Health Practices 33
Changes in Use of Preventive Health Services 41
Long-Term Care for the Elderly in Five States 47
Medical Care Use in Nonmetropolitan Areas 55
Use of Dental Services 63
Dental Manpower 69
Growth in Health Maintenance Organizations 75
Health Care Expenditures 81
Employment-Related Health Insurance 87

PART B: Data on the Nation's Health

List of Detailed Tables 95
Detailed Tables 99
Appendix I. Sources and Limitations of Data 219
Appendix II. Glossary of Terms 237
Guide to Tables 249

Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than 0 but less than 0.05
*	Figure does not meet standards of reliability or precision

Highlights

Health Status and Determinants

- After a rapid decline from 1960 to 1976, fertility rates in the United States have leveled off, reaching 67 births per 1,000 women 15-44 years of age in 1978. Provisional data for 1979 show a slight increase to 68 births per 1,000 women 15-44 years of age.
- Since 1973, birth rates for black teenagers have been decreasing more rapidly than those for white teenagers. However, in 1978, birth rates remained three times higher for black teenagers than for white teenagers—77 and 25 live births per 1,000 women 15-17 years of age, respectively.
- Life expectancy at birth continued to increase, reaching 69.5 years for men and 77.2 years for women in 1978. For the total population, provisional data for 1979 show a continued increase from 73.3 years in 1978 to 73.8 years in 1979.
- Age-adjusted mortality rates continue to decline. However, in 1978, they remained 80 percent higher for men than for women and 48 percent higher for black people than for white people.
- The infant mortality rate has continued to decline, reaching 13.8 deaths per 1,000 births in 1978 and a provisional rate of 13.0 in 1979. The mortality rate for black infants, however, is still almost twice as high as for white infants.
- Heart disease and stroke mortality have continued to decline for all ages. Cancer mortality has declined for people under 50 years of age, but has been increasing for those over 50 years of age.
- Following a substantial decrease in motor vehicle accident mortality, the age-adjusted rate for motor vehicle accidents increased by about 10 percent between 1975 and 1978. Motor vehicle accident mortality is particularly high for white men 15-24 years of age—75 deaths per 100,000 population.
- Although age-adjusted death rates for homicide for black men have been decreasing during the 1970's while increasing for white men, these rates remained substantially higher for black men in 1978—66 deaths per 100,000 population, compared with 9 for white men.
- After a period of essentially no change between the mid-1950's to the late 1960's, mortality rates among the elderly decreased at an average annual rate of 2 percent between 1968 and 1978. Rates for women declined more rapidly than those for men—2.3 percent versus 1.5 percent.
- Increases in lung cancer mortality rates have been accelerating for women while they have been decelerating for men. The average annual rate of increase for women 65-74 years of age rose from 0.2 percent for 1950-54 to 8 percent for 1968-78. For men of the same age group, it dropped from 8.9 percent to 2.4 percent per year. This rapid increase for women is associated with increases in cigarette smoking which peaked during the 1950's.
- The proportion of live births weighing 2,500 grams or less has declined very slowly during the 1970's and at a slightly greater rate among white infants than among black infants. The proportion of births at greatest risk (1,500 grams or less) declined even more slowly among white infants and increased slightly among black infants.
- Black infants are about two and one-half times as likely as white infants to weigh 1,500 grams or less at birth and twice as likely to weigh 2,500 grams or less.
- For each race, a marked decrease occurred in the proportion of low and very low birth weight infants as the educational attainment of the mother increased. The proportion of births weighing 1,500 grams or less was about 35 percent higher among mothers who had less than 12 years of education than among mothers who had 16 years or more. There was no reduction in this socioeconomic difference between 1972 and 1977.
- In 1979, an estimated 2.4 percent of the civilian noninstitutionalized population of the United States reported having diabetes. This represents a sixfold increase since 1935.
- Within age, sex, and race categories of the population, those with less education have a greater prevalence of known diabetes. About 58 percent of all diabetic adults have less than 12 years of education, compared with only 30 percent of nondiabetic adults.
- "Good" health practices, i.e., sleeping 7-8 hours a

night, limiting alcohol consumption, not smoking, being physically active, and controlling weight are related to physical health status and longevity.

- Although the majority of American adults 20-64 years of age are engaging in positive health practices, marked differences exist between population subgroups. While about 40 percent of adults with 13 years or more of education had at least four of five good health practices, only about 30 percent of those with less than 12 years of education had as many.

Utilization of Health Resources

- Although there has been a marked trend toward equality in the use of physician services by income groups, people in lower income groups use considerably fewer dental services than those in higher income groups. Furthermore, even among the higher income group, use of dental services vary—black people use less than white people and residents of nonmetropolitan areas use less than metropolitan residents.
- Ambulatory medical care utilization is considerably lower in nonmetropolitan areas than in metropolitan areas. Furthermore, residents of counties that did not have a city with a population of 10,000 or more generally had lower utilization rates than other nonmetropolitan areas.
- The use of Pap tests and breast examinations increased between 1973 and 1979. The increases were greater for black women than for white women and greater for middle-aged women than for younger women.
- The percent of persons screened for hypertension increased substantially between 1974 and 1979, with the largest increases occurring among middle-aged low-income men.
- Hospital discharge rates have been increasing during the 1970's, but the average length of stay has been decreasing at a faster pace. As a result, days of care have declined slightly.
- Rates for tonsillectomy among children have continued their long-term decrease. Between 1974 and 1979, these rates decreased by about 40 percent for children under 15 years of age.
- Cesarean section rates continued to increase. Between 1974 and 1979, the rate jumped by 78 percent to 16.4 per 100 deliveries.
- Continuing a long-term trend, rates for tubal ligation for women 15-44 years of age increased by 69 percent between 1974 and 1979.
- Rates for lens extraction (i.e., cataract removal) have increased substantially among the elderly. Between 1974 and 1979, these rates increased by about 30 percent for people 65 years of age and over.

Health Care Resources

- During the 1970's, the number of professionally active physicians per 10,000 population increased 30 percent. The number of professionally active physicians per 10,000 population is projected to increase another 34 percent between 1980 and 2000.
- Between 1965 and 1980, the number of active civilian dentists per 100,000 population increased by 18 percent.
- In 1979, the ratio of active dentists per 100,000 population in the Northeast was 50 percent higher than in the South. Dentist-to-population ratios were 62 percent higher in metropolitan areas than in nonmetropolitan areas. Metropolitan areas with a population exceeding one million had 22 percent more dentists per 100,000 population than smaller metropolitan areas. Likewise, the dentist-to-population ratio was 42 percent higher for nonmetropolitan counties with cities of 10,000 population or more than for nonmetropolitan counties not having a population center that large.
- The use of auxiliary dental manpower has been increasing. In 1955, about three-fourths of all dentists employed at least one auxiliary. By 1978, nearly all dentists employed at least one auxiliary.
- Between 1974 and 1979, the number of community hospitals decreased by about 3 percent. Occupancy rates in these hospitals have also decreased. However, their numbers of beds, full-time equivalent employees, and outpatient services have increased.
- While the number of nursing homes decreased by 14 percent between 1973 and 1978, their average size increased, resulting in an increase in the number of nursing home beds. However, the population 65 years of age and over increased more rapidly, resulting in a smaller number of beds per 1,000 population 65 years of age and over.
- The number of people enrolled in health maintenance organizations (HMO's) increased threefold since 1970, to 9.5 million in 1980.

Health Care Expenditures

- In 1980, health care expenditures in the United States totaled $247.2 billion, an average of $1,067 per person, and comprised 9.4 percent of the gross national product.
- Between 1970 and 1980, personal health care expenditures more than tripled, increasing at an average annual rate of 13 percent. Almost two-thirds of this increase was the result of price inflation in the health care sector.
- Rising health care expenditures are not unique to the United States. Other western industrialized countries have experienced similar or greater increases in recent years.

- In 1980, one-third of personal health care payments were made out-of-pocket, compared with two-thirds in 1950.
- Public programs paid 40 percent and private health insurance paid an additional 27 percent of the Nation's personal health care bill in 1980.
- In 1977, 88 percent of employees in the United States worked in firms that offered a health insurance plan. Workers in very small firms were less likely to have employment-related health insurance than others; 45 percent of this group (approximately nine million people) worked for firms in which group insurance was not available.
- Mean health insurance premiums in 1977 were approximately $600 per eligible employee. On the average, employers paid 80 percent of these premiums.
- Hospital care expenditures continue to claim the largest share of the health care dollar, accounting for 40 percent of total health care expenditures in 1980. Physician services and nursing home care accounted for 19 percent and 8.4 percent, respectively.
- The major portion of Government health care expenditures is for institutional care. For Medicare, hospital care accounted for 74 percent of expenditures in 1980. For Medicaid, the bulk of expenditures was almost evenly split between nursing home care and hospital care (41 percent and 38 percent, respectively).

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PART A

Selected Health Topics

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Trends and Variations in Birth Weight

by Joel C. Kleinman, Ph.D., National Center for Health Statistics

Introduction

Duration of pregnancy and intrauterine growth are the major determinants of infant mortality and morbidity. Both these factors are reflected in an infant's birth weight. The lower the birth weight, the greater are the chances of death, serious congenital anomalies, or other severe impairments (figure 1). Although infant mortality has been decreasing rapidly during the past 15 years, there has been relatively little change in birth weight. The reduction in mortality has been attributed in large part to major advances in neonatal intensive care that have resulted in much lower mortality among infants with low birth weights (National Center for Health Statistics, 1980b).

Yet, further progress in reducing infant mortality and morbidity will require a reduction in the incidence of low-birth-weight infants (Shapiro, 1981). The Federal objectives for health promotion and disease prevention include reducing the overall incidence of low birth weight and narrowing the differences in low birth weight among population subgroups (Public Health Service, 1980). Many interrelated factors influence birth weight including the following: maternal age, birth order, smoking, drinking (alcohol, caffeine), educational attainment, nutrition, weight gain during pregnancy, prenatal care, and occupational and environmental characteristics (Reed and Stanley, 1977). Information on certain of these variables is available from the birth certificate.

Two measures of the birth weight distribution will be used in this article: the low-birth-weight ratio (percent of live births weighing 2,500 grams or less), because this is the traditional indicator; and the very low-birth-weight ratio (percent of live births weighing 1,500 grams or less), because infants in this weight group are at much higher risk of death and serious morbidity. This article focuses on the relationships between these two birth-weight measures and maternal age, birth order, and educational attainment, and whether these relationships have changed during the 5 years from 1972 through 1977. Before turning to these detailed relationships, international comparisons and overall trends during 1970-78 will be presented.

International Comparisons

Table A shows very low-birth-weight (VLBW) and low-birth-weight (LBW) ratios and infant mortality rates for selected countries in 1973. International data must be interpreted with caution, because practices differ regarding definition of live birth versus fetal death and underregistration of infants who die soon after birth (most of whom are LBW). The countries listed in table A were selected to minimize these differences.

The United States has the second highest (after Hungary) VLBW and LBW ratios among the 10 countries shown. The United States also ranks fourth highest in infant mortality. When black infants only are considered, the VLBW and LBW ratios in the United States are about 15 percent higher than in Hungary, which has the highest

Table A. Percent of live births with very low birth weight (1,500 grams or less) or low birth weight (2,500 grams or less) and infant mortality rates: Selected developed countries, 1973

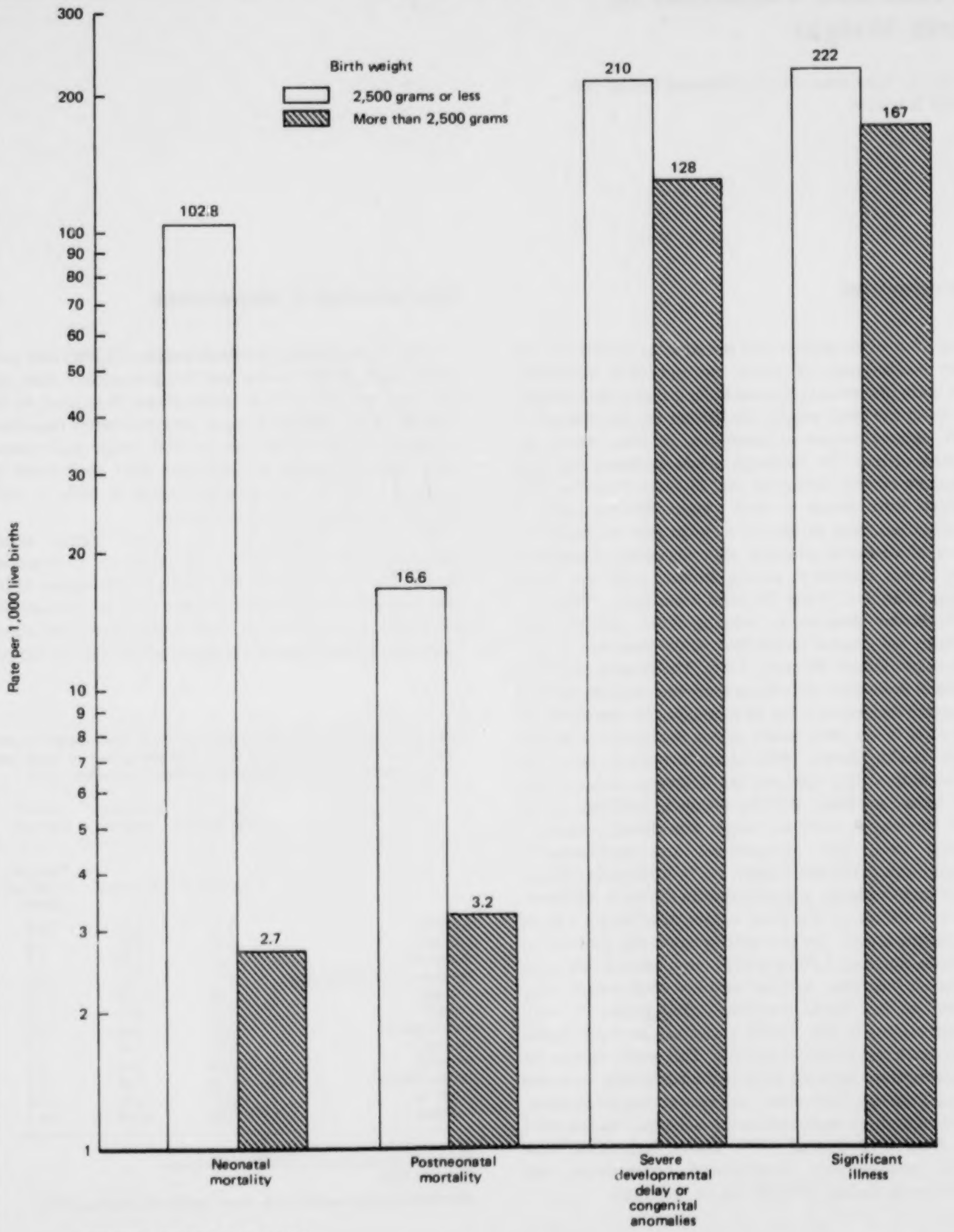
Country	Very low birth weight	Low birth weight	Infant mortality
	Percent of live births		Rate per 1,000 live births
Austria	0.89	5.37	23.8
Canada	0.86	6.98	15.6
Denmark	0.67	6.42	11.5
German Federal Republic	0.90	6.67	22.9
Hungary[1]	1.98	11.69	34.3
Japan[2]	0.30	4.74	11.3
New Zealand	0.50	4.69	16.2
Norway[3]	0.55	4.16	11.8
Sweden	0.52	3.56	9.9
United States	1.16	7.55	17.7
White	0.94	6.41	15.8
Black	2.28	13.25	28.1

[1] Data for 1974.

[2] Excludes infants weighing less than 500 grams.

[3] Data for 1972.

SOURCES: (United Nations, 1976; World Health Organization, 1978.)



SOURCE: (Shapiro et al., 1980.)

Figure 1. Infant mortality and morbidity, according to birth weight: Selected areas, 1974-75

overall ratios, but the infant mortality rate is about 18 percent lower. When white infants only are considered, the United States ranks fifth in LBW but second in VLBW. (Some of the latter difference may be explained by more complete birth registration of the very small infants in the United States.)

It has been suggested that the definition of LBW as 2,500 grams or less for all countries is inappropriate (Rooth, 1980). Birth weight is influenced by factors that differ among countries and do not necessarily reflect poor health. For example, altitude above sea level is directly related to birth weight. Colorado has a higher LBW ratio than most other States because its population lives at relatively high altitudes. Yet, the infant mortality rate for Colorado is not unusually high. Apparently, the "norm" for birth weight in Colorado is lower than in most other States.

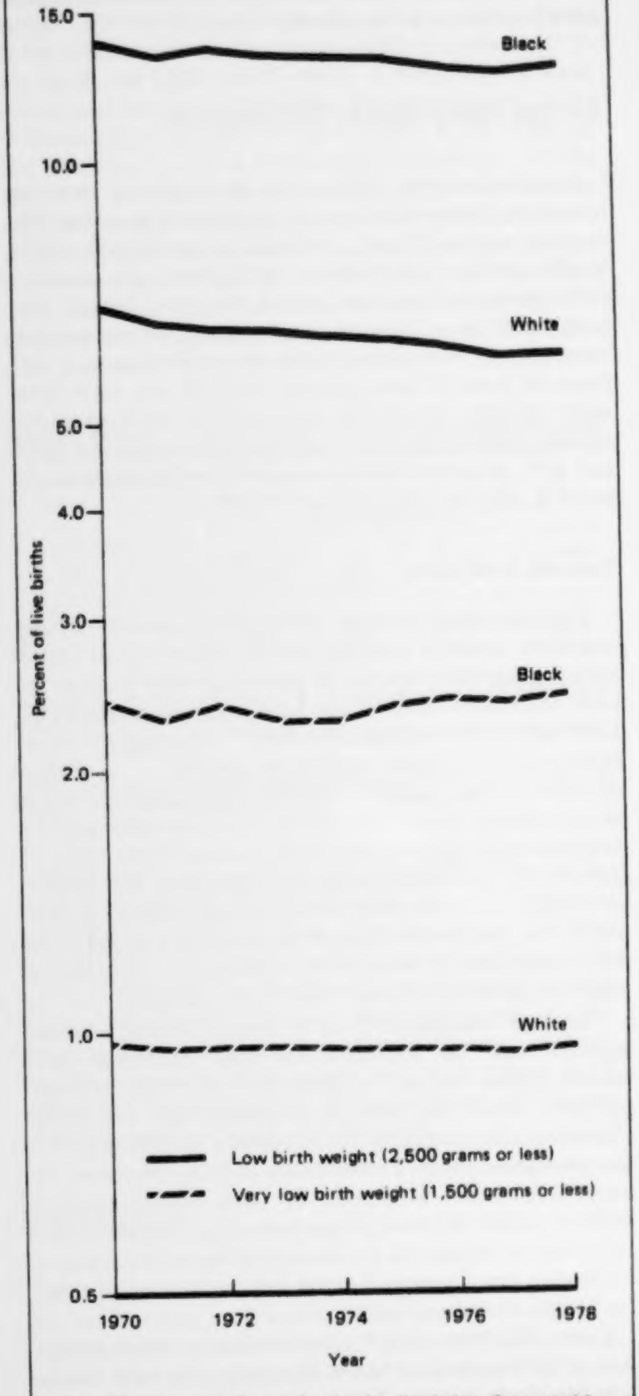
Rooth (1980) used the data from a study by the World Health Organization (WHO) of seven countries[1] to develop cutoff points other than the usual 2,500 grams for defining LBW ratios in each country. This redefinition changes the U.S. rank from third highest to sixth highest among the seven countries in the WHO study.

Despite the country's relatively poor standing in terms of birth weight and infant mortality, the United States has very low weight-specific perinatal and neonatal mortality rates. In the previously mentioned WHO study (1978) that compared weight-specific perinatal mortality among seven countries, the United States[1] had the lowest rates at all birth weights less than 3,500 grams. As noted before, part of this difference may result from the fact that birthweight norms differ between the United States and other countries, but it is likely that part results from the effectiveness of intensive neonatal care in the United States.

Overall Trends

The data in figure 2 show the trend in LBW and VLBW ratios during the 1970's. Declines in the LBW ratios have been modest, although the decline for white infants (1.7 percent per year) was greater than that for black infants (0.9 percent per year). The VLBW ratio showed a slight decline (0.6 percent per year) for white infants but a slight increase (0.4 percent per year) for black infants. By 1978, the black-to-white ratio was 2.2 for LBW and 2.7 for VLBW.

One possible explanation for the lack of decline in the VLBW ratio is the rapid decline in fetal mortality at weights 1,500 grams or less, resulting in more very small fetuses being born alive. This possibility was investigated by tabulating fetal deaths from 1973 through 1977. The decline in fetal death rates at weights 1,500 grams or less during this period has in fact had an effect on the trends. For example, the VLBW ratio among white live-born infants declined by 1.2 percent per year while the corresponding ratio declined 1.9 percent per year for total births (i.e., live births



SOURCE: National Center for Health Statistics: Computed by Division of Analysis from data compiled by Division of Vital Statistics.

Figure 2. Percent of live births with very low birth weight and low birth weight, according to race: United States, 1970-78

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[1] Data from six States were combined to represent the United States.

plus fetal deaths). For black infants, the VLBW ratio increased by 1.4 percent per year for live births and 0.2 percent per year for total births. Thus, the inclusion of fetal deaths shows more favorable trends than are evident for live births. However, the black-white differential in the trends remains when total births are considered.

Sociodemographic Differences

Sociodemographic differences in pregnancy outcome have been observed for several decades and in several different countries (Shapiro, Schlesinger, and Nesbitt, 1968; World Health Organization, 1978; Reed and Stanley, 1977; National Center for Health Statistics, 1980a). The birth certificates of many States record information on some relevant sociodemographic factors. This section will focus on three of these factors—maternal age, total birth order (number of children ever born to the mother, including stillbirths), and educational attainment—for 1972 and 1977. Multiple births are excluded because they are at much greater risk of LBW and VLBW.

Age and Birth Order

The relationship between birth weight and maternal age and birth order is complex and is influenced by other sociodemographic factors. In general, women younger or older than 20-34 years of age have a greater incidence of LBW and VLBW infants. The factors responsible for the higher risk in younger versus older mothers are probably different. Older mothers with low birth order are more likely to have a history of problems with prior pregnancies. Mothers of all ages with high birth order are more likely to have lower socioeconomic status. Yet, merely being older or of high birth order does not lead to poor pregnancy outcome. For example, mothers 40 years of age and over with birth order three or more who are college graduates have a very low incidence of LBW and VLBW infants.

The high incidence of LBW infants among teenage mothers may be explained by both biological and socioeconomic factors. In general, very young teenage mothers have the double disadvantage of being physiologically immature for pregnancy and having low socioeconomic status. Furthermore, in 1978, 59 percent of white infants and 91 percent of black infants born to mothers under 18 years of age were out-of-wedlock. Infants born to unmarried women have a higher incidence of LBW than those born to married women (National Center for Health Statistics, 1980a).

From 1972 through 1977, there was a 9-percent reduction in LBW ratio for white infants and a 6-percent reduction for black infants. The declines in the VLBW ratios were smaller—a 6-percent reduction among white infants and no reduction among black infants. Some of these reductions can be attributed to a more favorable age-birth-order distribution of live births. For example, assuming no change for 1972-77 in the incidence of LBW or VLBW infants within each age-birth-order combination, the change in age-birth-order distribution itself would have resulted in a decrease of 2 percent in the LBW and 1 percent in the VLBW ratios for both white and black infants.

The expected decrease in VLBW ratios, compared with no change in the ratio for black infants, indicates that certain age-birth-order groups experienced an increase in VLBW ratios. In fact, the changes in VLBW and LBW ratios for both white and black infants have not been uniform across all age-birth-order groups.

White infants born to mothers 30-39 years of age with one previous birth experienced the largest declines in LBW ratios. The smallest decreases were observed for infants born to mothers 18-24 years of age and 40 years of age and over and to those with no previous births. In particular, first births to mothers 20-24 years of age, which account for the largest number of all births, showed no decline in LBW ratio. With respect to VLBW, infants born to mothers under 18 years of age and 30-34 years of age and to those with one or more previous births showed the greatest declines. The VLBW ratio among first births to women 20-24 years of age increased by about 2 percent.

Black infants born to mothers 30-34 years of age and to mothers with two previous births had the greatest declines in LBW ratios. However, the smallest declines were observed for infants born to mothers 20-24 years of age and to mothers with three or more previous births. There was only a 1-percent decline in LBW among first births to women 20-24 years of age. With respect to VLBW, changes were different for infants born to mothers with no previous births, compared with those born to mothers with one or more, but there were no significant differences by maternal age. Infants born to women with no previous births showed an increase of about 5 percent, compared with essentially no change for those born to women with one or more previous births.

Educational Attainment

Socioeconomic factors affect infant mortality as well as birth weight (Shapiro, Schlesinger, and Nesbitt, 1968; Reed and Stanley, 1977). The most useful measure of socioeconomic status available from the birth certificate is the mother's educational attainment. Comparative data will be presented for the 39 States that reported this item in both 1972 and 1977.

Although the magnitude of the relationship between education and birth weight varies with age and birth order, the general trends are similar. Thus, LBW and VLBW ratios will be examined according to education of mother after adjusting for age and birth order.[2] Since almost no teenage mothers have more than high school education, differentials by education will be presented only for mothers 20 years of age and over.

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[2] The adjustment was made using direct standardization with the age-birth-order distribution of all 1972 live births as the standard.

Table B shows VLBW ratios for 1972 and 1977 according to race and years of education completed by mother. Birth weights of both black and white infants followed a similar pattern in each year, with average[3] differences of 14 and 24 percent, respectively, in VLBW ratios between those born to mothers with less than 12 years of education and those to mothers with 12 years. Neither black nor white infants show an appreciable difference in VLBW ratios between high school and college graduates. There was no significant change in VLBW ratios between the 2 years. For each educational level, black infants were about two and one-half times more likely to be of VLBW than white infants.

Table B. Percent[1] of single live births with very low birth weight (1,500 grams or less) or low birth weight (2,500 grams or less), according to educational attainment of mother and race: United States,[2] 1972 and 1977

Birth weight, race, and year	Education of mother Less than 12 years	 12 years	 13–15 years	 16 years or more
VERY LOW BIRTH WEIGHT		Percent of live births		
White				
1972	0.85	0.63	0.66	0.65
1977	0.88	0.66	0.64	0.63
Black				
1972	1.97	1.70	1.73	1.61
1977	2.12	1.81	1.83	1.79
LOW BIRTH WEIGHT				
White				
1972	7.29	5.16	4.43	3.97
1977	6.99	4.74	4.09	3.63
Black				
1972	13.59	10.85	9.76	8.92
1977	13.04	10.31	9.41	8.15

[1] Adjusted by the direct method for maternal age and total birth order. Births to women under 20 years of age excluded.
[2] Refers only to births to residents of areas reporting educational attainment of mother in 1972.

SOURCE: National Center for Health Statistics: Computed by Division of Analysis from data compiled by Division of Vital Statistics.

When examining LBW ratios, a somewhat different picture emerges. Both black infants and white infants at each educational level experienced about the same decrease (an average of 6 percent) in LBW ratios between 1972 and 1977. In both years, white infants exhibited a slightly larger differential between those born to high school graduates and those to nongraduates than black infants did (averages of 31 percent versus 21 percent). The remaining educational differentials were similar for black infants and white infants. The difference in LBW between black infants and white infants was somewhat smaller than that for VLBW. Black infants were almost twice as likely as white infants to be of LBW.

As noted earlier in the section on international comparisons, it has been suggested that the cutoff used to define LBW should be different for different populations. If the method presented by Rooth (1980) is applied to U.S. live births, the LBW cutoff remains 2,500 grams for white infants and becomes 2,250 grams for black infants. Table C shows the proportion of black infants 2,250 grams or less according to mother's educational attainment for 1972 and 1977. If this proportion for black infants is compared with the proportion 2,500 grams or less for white infants, the black-white differential is reduced, especially for the lowest educational group. In 1977, the black-to-white LBW ratio was 1.02 for births to women who did not graduate from high school and 1.28 for births to women who graduated from college.

Table C. Percent[1] of single live-born black infants weighing 2,250 grams or less at birth, according to educational attainment of mother: United States,[2] 1972 and 1977

Year	Education of mother Less than 12 years	 12 years	 13–15 years	 16 years or more
1972	7.52	5.90	5.15	5.05
1977	7.12	5.71	5.31	4.66

[1] Adjusted by the direct method for maternal age and total birth order. Births to women under 20 years of age excluded.
[2] Refers only to births to residents of areas reporting educational attainment of mother in 1972.

SOURCE: National Center for Health Statistics: Computed by Division of Analysis from data compiled by Division of Vital Statistics.

In the previous section, it was noted that some of the smallest declines in the VLBW and LBW ratios were experienced by the largest group of births, namely, those to mothers 20-24 years of age with no previous births. Educational differentials for this group were examined in more detail to determine whether the small change was concentrated in a particular educational level. However, this was not the case. Both white infants and black infants at all educational levels showed an average increase of 9 percent in VLBW and no change in LBW ratios.

Conclusion

The proportion of live births weighing 2,500 grams or less has declined very slowly during the 1970's and at a slightly greater rate among white infants than among black infants. The proportion of births at greatest risk (i.e., 1,500 grams or less) declined even more slowly for white infants and increased slightly for black infants. Furthermore, the differences in birth weight by mother's educational attainment did not diminish between 1972 and 1977. The proportion of high-risk births (i.e., birth weight less than either 1,501 grams or 2,501 grams) decreased steadily with increasing educational level of mother.

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[3] The term "average" in this article refers to a weighted average that cannot be directly computed from the tables. The weighted averages are based on a statistical technique that takes into account the variances of the VLBW and LBW ratios.

The most striking difference in birth weight is that between black and white infants. Black infants are about two and one-half times as likely as white infants to be of VLBW and two times as likely to be of LBW. Even births to black mothers with college education had a higher LBW ratio than births to white mothers with less than high school education (8.1 percent versus 7.0 percent in 1977). When the data are adjusted for different norms (i.e., LBW for black infants redefined as 2,250 grams or less), the black-white ratio ranges from about 1.0 to 1.3.

Undoubtedly, many factors contribute to the racial and educational differences in birth weight. One set of factors involves personal health habits that influence pregnancy outcome including LBW. Maternal smoking and alcohol consumption have been associated with reduced birth weight (Reed and Stanley, 1977; Little, 1977). These practices are more common among women with less than 12 years education. For example, data from a 1979 survey indicate that among women 20-34 years of age 64 percent of those with less than 12 years education had been smokers, compared with 42 percent of those with some college education (Wilson and Elinson, 1981). Similarly, 14 percent of those with less than 12 years education had five or more alcoholic drinks per day, compared with only 3 percent of those with some college (Wilson and Elinson, 1981). Although these practices could change during pregnancy, it is likely that more favorable changes would occur among the more educated.

More definitive analysis of the factors involved in LBW will become possible when the National Natality and Fetal Mortality Survey of 1981 is completed. Through this survey, detailed data for a sample of live births and fetal deaths are collected by means of questionnaires mailed to mothers, physicians, and hospitals.

Unfortunately, current knowledge of the risk factors affecting birth weight has not been translated easily into strategies for prevention of low birth weight. For example, Hemminki and Starfield (1978) reviewed 37 controlled studies that attempted to evaluate the effectiveness of certain specific interventions to prevent low birth weight. Only three of these showed that intervention was beneficial. They indicated, however, the paucity of research on the effect of interventions to modify behavior. For example, there are few studies reported in the literature that evaluate the benefits of interventions designed to motivate pregnant women to stop smoking, avoid or minimize the use of alcohol, and maintain an adequate diet.

The major modality for intervention is prenatal care. Rather than one specific intervention, prenatal care consists of a myriad of interventions that are (or should be) tailored to the individual woman and her pregnancy. Counseling about the effects on the fetus of diet, smoking, and alcohol consumption is a crucial component of prenatal care. Thus, the content and quality of prenatal care can vary depending upon the provider as well as the patient. Because of these and other technical difficulties, the evidence on the effectiveness of prenatal care in reducing the incidence of low birth weight is not conclusive. However, several studies have suggested such an effect (Gortmaker, 1979; Quick, Greenlick, and Roghmann, 1981).

Given current medical knowledge, high quality prenatal care beginning early in pregnancy holds the greatest promise for reducing the racial and socioeconomic disparities in birth weight. Yet, in 1978, nearly 80 percent of white mothers began prenatal care in the first trimester of pregnancy, compared with 60 percent of black mothers (detailed table 24). Within both race groups, teenage mothers and mothers with low educational attainment were much less likely to receive early prenatal care. Thus, mothers at highest risk of having a LBW infant are least likely to begin prenatal care early. The reasons for these differences in use of prenatal care are many. Availability or convenience of prenatal care services may need improvement. Adequate health education to promote awareness of and motivation for the need to seek early care is another area that may improve the level of care.

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Mortality Among the Elderly

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Introduction

Mortality among the elderly has become an area of growing interest and public health concern. Increasing longevity of the population as a result of declining death rates has made the population 65 years of age and over more numerous in both absolute and relative terms and has altered the nature and demand for a variety of social and health services.

Growth in the size of the elderly population in the United States, especially during recent years, has resulted mainly from decreases in mortality among the elderly. These reductions are virtually without precedent. Continued reductions in death rates among the older population would contribute to higher life expectancy as well as to more elderly in the population.

This article examines mortality trends among the older population, the principal causes of death contributing to the mortality changes, and the changing patterns of mortality in the United States compared with those in other countries.

Demographic Background

Men and women in the United States are reaching 65 years of age in greater numbers and proportions than ever before. In 1940, the elderly in the United States numbered 9 million. By 1979, their number had increased to 24.7 million. The proportion of elderly in the total population has increased from 7 percent in 1940 to an estimated 11 percent in 1979. Further, the ratio of persons 65 years of age and over to those 20-64 years of age, often cited as a measure of dependency of the elderly population to the work force, has grown from 12 per 100 in 1940 to 20 per 100 in 1979 (U.S. Bureau of the Census, 1965 and 1980).

Within the elderly population, a growing proportion has been at the higher ages. In 1940, 42 percent of the elderly were 65-69 years of age and 13 percent were 80 years of age and over; by 1979, 35 percent were 65-69 years of age and 21 percent were 80 years of age and over (U.S. Bureau of the Census, 1965 and 1980).

In addition to changes in the age distribution, an increasing proportion of the elderly are female. In 1940, there were 95 males for every 100 females; by 1979, there were only 70 males for every 100 females (U.S. Bureau of the Census, 1965 and 1980).

The aging of the U.S. population in the 20th century has been a consequence of two factors—declining fertility and declining mortality. Declining fertility reduces the proportion of young persons relative to the older population, while declining mortality results in more persons surviving. During the first half of this century, the major factor was declining fertility (Hermalin, 1966). The cohort of women born during 1865-75 completed their childbearing years with an average of about four children each, whereas women born at the turn of the century had an average of two to three children each (National Center for Health Statistics, 1976).

During the same period, however, declining mortality operated in an opposing fashion. Mortality decline was concentrated at the younger ages, resulting in a relative increase in the number of younger people in the population. On the other hand, decreases in mortality occurred across the age spectrum during the second half of this century. This has resulted in a larger elderly population than would have occurred had declines in mortality remained solely at the younger ages.

In terms of the future, the size of the elderly population from now until about 2040 already has been determined largely by past trends in fertility. The "baby boom" infants of the mid-1940's through the late 1950's will reach 65 years of age during 2010-2025. The decrease in the number of births after the early 1960's will affect the number of elderly individuals in the population after 2025. Further changes in the size of the elderly population during the next half century will result mainly from changes in mortality patterns for this population. Immigration, historically a significant component of population change in this age group, is not expected to play a major role in the future.

Mortality Trends

From 1940 to 1978, the death rate for the elderly decreased by 26.7 percent to 52.9 deaths per 1,000 population 65 years of age and over. The decline was twice as great for females as for males, 33.0 percent versus 16.7 percent.

Some of the change in mortality for the elderly is obscured by the aging of the elderly population. An analysis of time trends in mortality is enhanced by examining age-specific death rates and age-adjusted death rates,[1] which are relatively free from the distortions associated with a changing age composition. The age-adjusted rate shows what the level of mortality would be if no changes occurred in the age composition of the population—in this case the population 65 years of age and over—from year to year.

From 1940 to 1978, the age-adjusted death rate for the elderly decreased by 37.7 percent, 11 percentage points more than the decline in the unadjusted death rate during this period. Similarly, the age-adjusted rate decreased by 24.5 percent for males and 46.7 percent for females, far more than indicated by the change in the unadjusted death rate. Because of the very large differences in levels and trends in mortality between males and females, the discussion below is largely in terms of males and females discussed separately.

Mortality trends are fairly well delineated into three time periods characterized by their varying pace of mortality change—1940-54, 1955-67, and 1968-78 (figure 1). The

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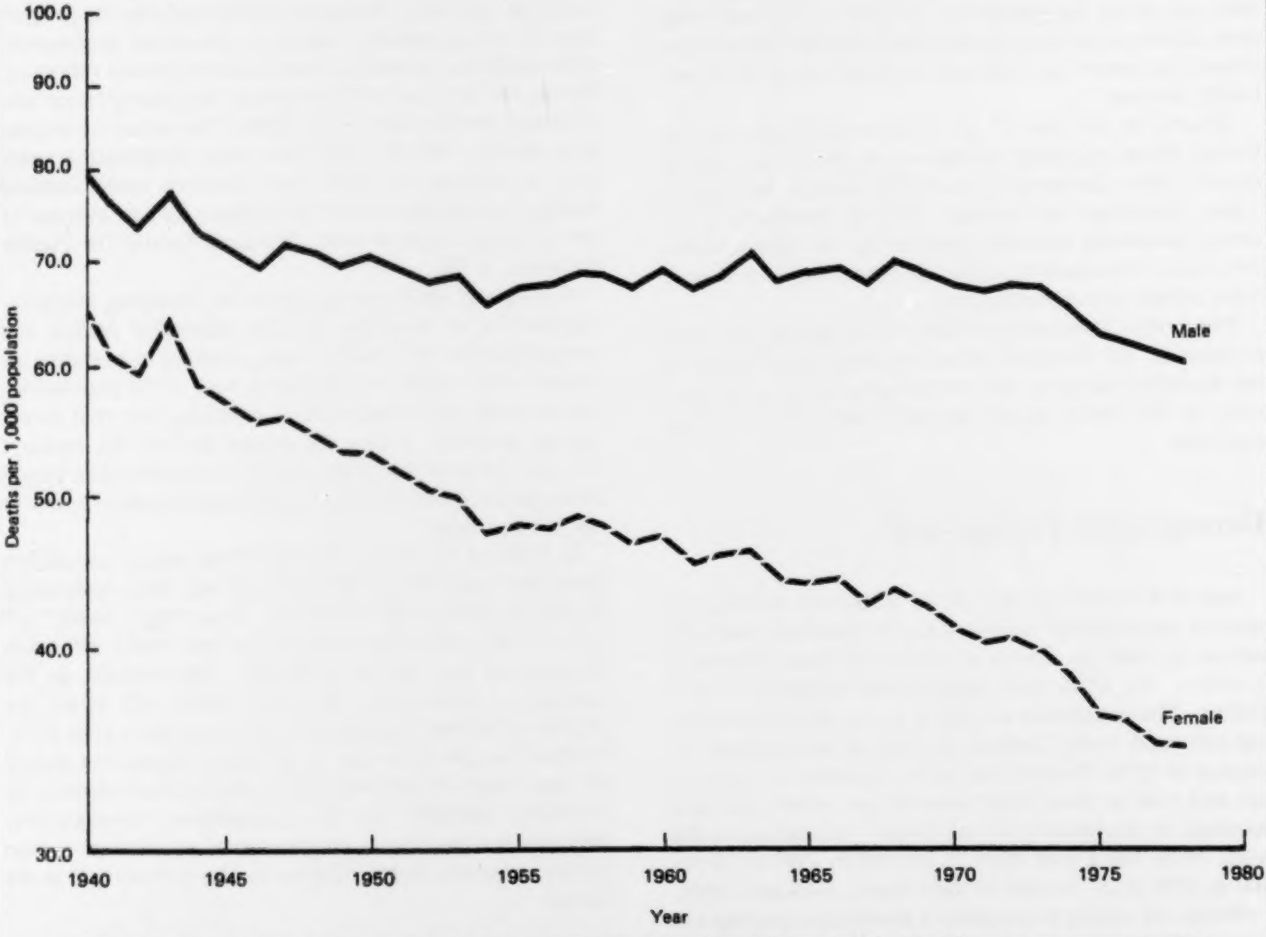
[1] Age adjusted by the direct method to the population 65 years of age and over in 1940, using the 5 age groups 65-69 years, 70-74 years, 75-79 years, 80-84 years, and 85 years of age and over.



NOTES: Age adjusted by the direct method to the population 65 years of age and over in the United States as enumerated in 1940, using 5 age groups. Death rates for the group 85 years of age and over in 1970 used in computation of rates are based on population estimates revised by the U.S. Bureau of the Census to correct for overestimates of the group 100 years of age and over. See footnote 3 in text for more complete discussion.

SOURCE: National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

Figure 1. Age-adjusted death rates for persons 65 years of age and over, according to sex: United States, 1940-78

earliest period, 1940-54, was a time of moderately rapid decline, when age-adjusted death rates among those 65 years of age and over decreased by an average annual rate[2] of 1.1 percent for males and 2.0 percent for females (table A). The 1955-67 period was a time of leveling off with relatively little change in mortality among the elderly. The age-adjusted death rate increased 0.2 percent annually for males but decreased by 1.0 percent annually for females. The most recent years, 1968-78, have once again been a time of relatively sharp reductions in mortality, with age-adjusted rates showing average annual reductions of 1.5 percent for males and 2.3 percent for females. These reductions are even greater than those of the first period.

Trends in Death Rates by Age

In each of the five age groups 65-69 years, 70-74 years, 75-79 years, 80-84 years, and 85 years of age and over, death rates decreased for both males and females during 1940-78. Age-specific death rates for males 65 years of age and over showed decreases ranging from 22 percent to 30 percent, while the rates for females decreased even more, from 40 percent to 50 percent.

During 1940-54, death rates for these age groups declined annually by about 1 percent for males and 2 percent for females (table A). For males, the annual decreases were slightly greater at older ages, while the reverse was true for females. Mortality rates during 1955-67 were characterized by little change for males but by 1-percent average annual declines for females in each age group under 85 years of age. Declines in mortality rates for the most recent period, 1968-78, were greater than those for 1940-54 among most age groups, with the most improvement occurring among males 65-69 years of age and among those 85 years of age and over regardless of sex.[3]

Sex Differences in Mortality

Mortality differences between males and females 65 years of age and over have been increasing steadily over time. In 1940, the age-adjusted death rate for males was 22 percent higher than that for females; but by 1978, the relative difference had increased to 73 percent. One way of readily summarizing the sex differences in mortality is by the mortality sex ratio (hereinafter referred to as the sex ratio), which is the ratio of the male death rate to female death rate (table B).

Table A. Average annual percent change in death rates for persons 65 years of age and over, according to sex and age: United States, 1940-54, 1955-67, 1968-78

Sex and age	Years		
	1940-54	1955-67	1968-78
Male	Average annual percent change		
65 years of age and over[1] . .	−1.1	0.2	−1.5
65-69 years of age	−0.7	0.1	−2.2
70-74 years of age	−1.0	0.2	−1.5
75-79 years of age	−1.1	0.2	−0.9
80-84 years of age	−1.3	−0.4	−1.2
85 years of age and over . . .	−1.5	0.9	−2.2
Female			
65 years of age and over[1] . .	−2.0	−1.0	−2.3
65-69 years of age	−2.3	−1.1	−2.6
70-74 years of age	−2.2	−1.3	−2.0
75-79 years of age	−1.9	−1.2	−1.7
80-84 years of age	−1.9	−1.1	−2.3
85 years of age and over . . .	−1.3	0.0	−3.0

[1] Age adjusted by the direct method to the population 65 years of age and over in the United States as enumerated in 1940, using 5 age groups.

NOTES: The average annual percent change was calculated by fitting a regression line to the logarithm of the death rates for every year. The slope of the line is the estimate of the annual rate of change. Death rates for the population 85 years of age and over (used in the calculation of the age-adjusted rates) in 1970 are based on populations revised by the U.S. Bureau of the Census to correct for overestimates of the population 100 years of age and over. See footnote 3 in text for more complete discussion.

SOURCE: National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

The sex ratio increased annually from 1940 through 1978 by about 2 percent for those 65-69 and 70-74 years of age, while increasing more slowly at older ages. During the earliest of the three periods, 1940-54, the sex ratio increased rapidly at 65-69 years of age, 2.5 percent annually (table B), but tapered off gradually with advancing age to almost no change at the oldest ages.

Mortality change was relatively slow for 1955-67, but annual increases in the sex ratio were greater than those for the earlier period and generally greater than those for the later period, 1968-78. For the age groups 65-69 years, 70-74 years, and 75-79 years, the sex ratio increased annually by an average of 2 percent, while at 80-84 and 85 years of age and over the annual increase was 1 percent.

The annual increase in the sex ratio slowed during 1968-78 for those 65-69 years, 70-74 years, and 75-79 years of age as a result of the accelerating decline of male mortality. For those 80-84 years of age, the ratio continued to increase; and for the oldest group, the annual increase remained at 1 percent.

Cause of Death

Heart disease, cancer, and stroke accounted for 3 out of every 4 deaths among the population 65 years of age and over in 1978 as well as in 1950.[4] Trends in mortality among

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[2] Throughout this article, annual rates of change are calculated by fitting a regression line to the logarithm of the death rates for every year. The slope of the line is the estimate of the annual rate of change of the death rates.

[3] Throughout this article, death rates for the population 85 years of age and over in 1970 are based on population revised by the U.S. Bureau of the Census to correct for overestimates of the population 85 years of age and over, specifically, the population 100 years of age and over. The enumerated count of the group 85 years of age and over was 542,379 for males and 968,522 for females; the revised figures were 489,000 and 919,000, respectively (U.S. Bureau of the Census, 1972, 1973, and 1974).

[4] Because of problems of comparability among specific causes of death between the *Fifth and Sixth Revisions* of the *International Classification of Diseases*, 1950 was chosen as the starting point of this analysis (National Center for Health Statistics, 1963).

Table B. Mortality sex ratio and annual percent change, according to age: United States, selected years 1940-78

Year	Age adjusted[1]	65-69 years	70-74 years	75-79 years	80-84 years	85 years and over
			Male death rate/female death rate			
1940	1.22	1.34	1.25	1.20	1.15	1.08
1945	1.28	1.42	1.30	1.23	1.17	1.10
1950	1.34	1.58	1.40	1.29	1.21	1.13
1955	1.39	1.68	1.53	1.34	1.27	1.06
1960	1.47	1.83	1.62	1.42	1.27	1.11
1965	1.57	1.93	1.76	1.53	1.35	1.17
1970	1.64	2.02	1.82	1.61	1.41	1.21
1975	1.72	2.10	1.88	1.69	1.51	1.25
1976	1.72	2.10	1.90	1.70	1.51	1.26
1977	1.73	2.05	1.92	1.72	1.54	1.28
1978	1.73	2.04	1.93	1.71	1.54	1.27
			Average annual percent change			
1940-54	1.2	2.5	1.6	1.0	0.7	-0.2
1955-67	1.7	2.3	2.4	1.9	1.0	1.0
1968-78	1.3	0.9	1.1	1.4	1.7	1.0

[1] Age adjusted by the direct method to the population 65 years of age and over in the United States as enumerated in 1940, using 5 age groups.

SOURCE: National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

the elderly since 1950 are examined for each of these leading causes of death.

Diseases of the Heart

Trends and patterns in heart disease mortality largely determine the salient features of general mortality in the United States. Heart disease was the leading cause of death among the total population and among the elderly in 1978 as well as in 1950. Among those 65 years of age and over, 44 out of every 100 deaths in 1978 resulted from heart disease.

From 1950 through 1954, heart disease mortality decreased for males and females 65-74 years of age, 75-84 years of age, and 85 years of age and over (figure 2). The decrease was greatest for males 85 years of age and over and for females 65-74 years of age. Heart disease mortality remained unchanged during the next 12 years for males 65-84 years of age and for females 85 years of age and over. Characteristic of female mortality trends for this period, average annual declines of about 1 percent were observed for females 65-84 years of age. The period 1968-78 has been one of relatively rapid decline, with annual decreases averaging more than 2 percent and paralleling those reported for all causes of death combined. Among females 65-74 years of age, heart disease mortality was reduced an average of 3.5 percent annually.

The sex ratio increased from 1950 through 1978 for these 10-year age groups. By 1978, the ratio was 2.14 at 65-74 years of age, a 33-percent increase since 1950. From 1950 through 1978, the sex ratios for those over 75 years of age also increased but not as much.

Cancer

Malignant neoplasms is the only major cause of death for which the death rates among the elderly have continued to rise since 1900. In 1978, cancer was the second leading cause of death among the elderly under 85 years of age and the third leading cause of death among those 85 years of age and over. Cancer accounted for 26 percent of all deaths among those 65-74 years of age, 18 percent among those 75-84 years of age, and 10 percent among those 85 years of age and over.

The term cancer collectively describes many types of malignant neoplasms. Lung cancer (trachea, bronchus, and lung), colon cancer (large intestine except rectum), genital organ cancer, and breast cancer (among females)[5] combined accounted for more than half of all cancer deaths among the elderly in 1978.

Lung cancer is the leading cause of cancer deaths among males 65-84 years of age, while cancer of the genital organs (predominantly prostate) is the leading cause of cancer deaths among males 85 years of age and over. Among females 65-74 years of age, breast cancer accounts for the most cancer deaths. Among those 75 years of age and over, colon cancer has the highest cancer death rate.

The total cancer death rate has risen almost uninterruptedly among elderly males since 1950, while annual

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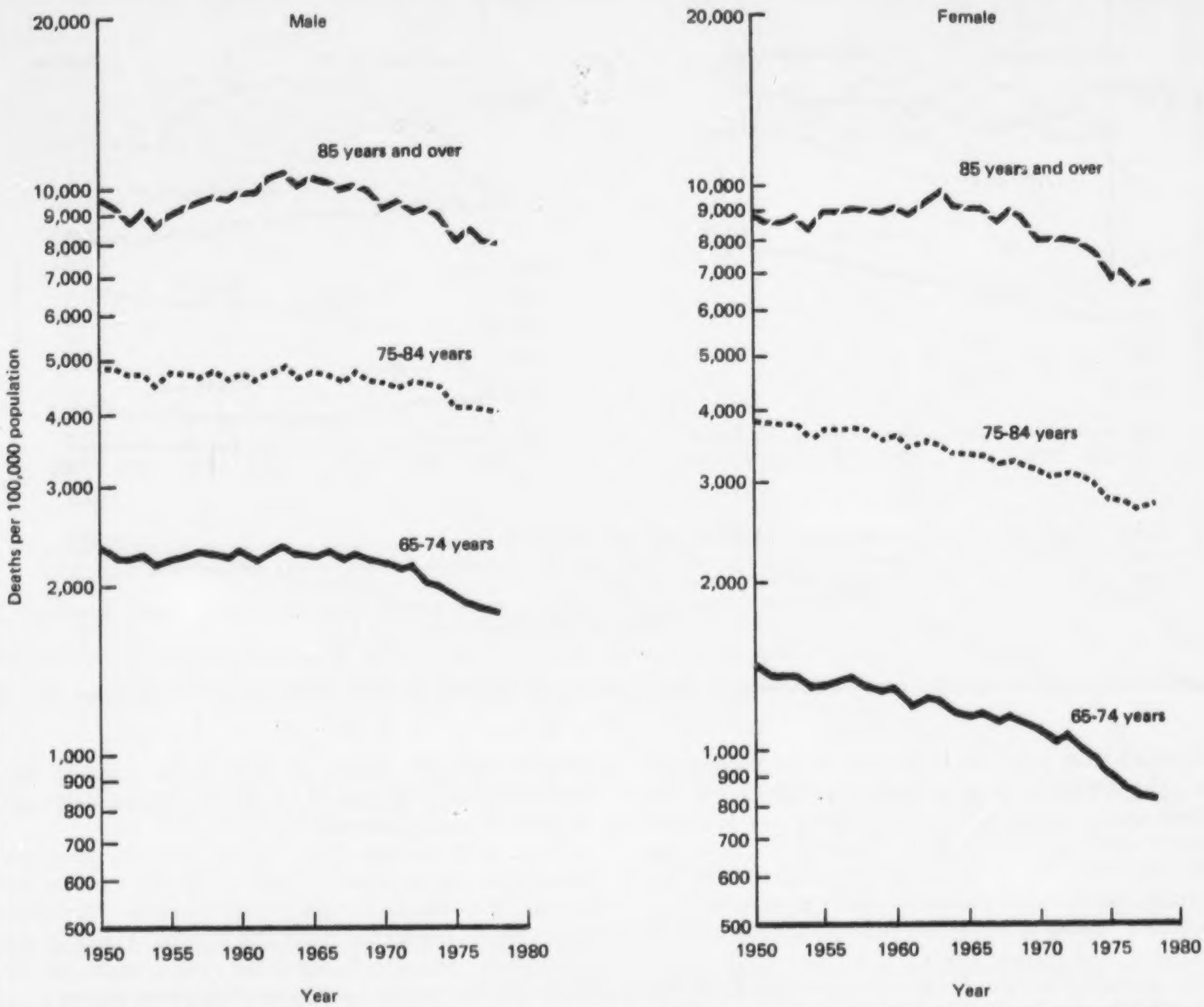
[5] Codes for these cancer sites from the *International Classification of Diseases, Adapted for Use in the United States* are as follows: trachea, bronchus, and lung—for 1950 through 1967, codes 162, 163; for 1968-78, 162; colon—for 1950-67, codes 152, 153; for 1968-78, 153; genital organs—for 1950-67, codes 171-179; for 1968-78, 180-187; and breast—for 1950-67, 170; for 1968-78, 174.



NOTES: Death rates for the group 85 years of age and over in 1970 are based on population estimates revised by the U.S. Bureau of the Census to correct for overestimates of the group 100 years of age and over. See footnote 3 in text for more complete discussion. ICDA codes are as follows: for 1950-67, 400-402 and 410-413 and for 1968-78, 390-398 and 402, 404, and 410-429.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-76. Public Health Service. Washington. U.S. Government Printing Office, and 1977-78 to be published, and unpublished data.

Figure 2. Death rates for diseases of heart among persons 65 years of age and over, according to sex and age: United States, 1950-78

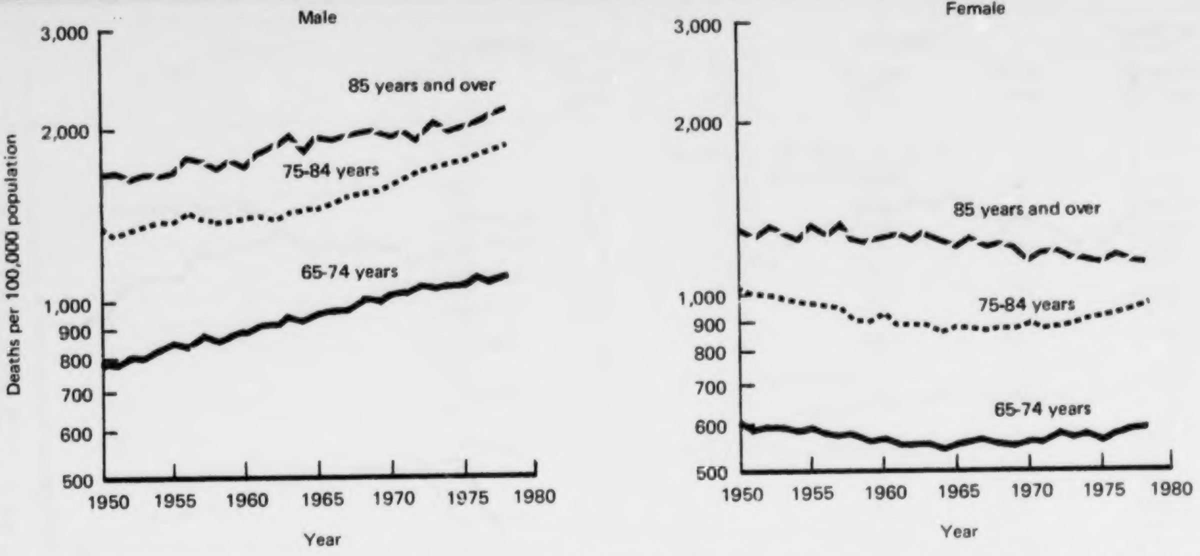
decreases were observed among elderly females before the mid-1960's. Since then, the cancer death rate for females has been increasing.

From 1950 through 1967, cancer mortality among all elderly males increased an average of about 1 percent per year (figure 3), with increases generally slower from 1955 on. Most of the increase is attributable to the rapid rise in lung cancer mortality.

During 1968-78, cancer mortality increased rapidly for males 75-84 years of age. The average annual increase of 2 percent per year was largely the result of rapid annual increases in lung cancer mortality. On the other hand, increases in lung cancer mortality decelerated among males 65-74 years of age. As a result, the total cancer rate for them slowed to less than 1 percent per year.

Among elderly females, decreases of less than 1 percent per year were observed during 1950-67. Annual reductions were observed for each leading site except the lung. After 1967, the slow decline reversed among women 65-74 and 75-84 years of age, and mortality rates increased annually about 1 percent. At 85 years of age and over, the slow rate of decline continued.

From 1950-54 to 1968-78, the average annual increases in lung cancer death rates among females 65-74 years of age rose from 0.2 percent to 8.0 percent. For males of the same age group, lung cancer mortality increases



NOTES: Death rates for the group 85 years of age and over in 1970 are based on population estimates revised by the U.S. Bureau of the Census to correct for overestimates of the group 100 years of age and over. See footnote 3 in text for more complete discussion. ICDA codes are as follows: for 1950-67, 140-205 and for 1968-78, 140-209.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-76. Public Health Service. Washington. U.S. Government Printing Office, and 1977-78 to be published, and unpublished data.

Figure 3. Death rates for malignant neoplasms among persons 65 years of age and over, according to sex and age: United States, 1950-78

decelerated from 8.9 percent per year to 2.4 percent per year. The extremely rapid mortality increases noted for females are associated with their increasing prevalence of cigarette smoking, which peaked during the 1950's for the 1901-1910 birth cohort. Smoking prevalence peaked for the 1901-1910 cohort of males some 20-25 years earlier and has been dropping more rapidly than for females (Office of Smoking and Health, 1980).

The mortality sex ratio for all cancers increased greatly from 1950 through 1967 among the elderly, because cancer mortality increased among males and decreased among females. Since 1968, increases in the ratio have slowed because of the upturn in lung cancer death rates for females.

Cerebrovascular Diseases

Stroke is the third leading cause of death among those 65-74 years of age and 75-84 years of age and the second leading cause among those 85 years of age and over. In 1978, stroke was responsible for 8 percent of all deaths of those 65-74 years of age. The risk of death from stroke increases markedly at older ages, claiming 13 percent of all deaths at 75-84 years of age and 16 percent at 85 years of age and over.

Death rates for stroke have been decreasing even more rapidly than rates for heart disease. The most striking trends in stroke mortality have been the most recent, those since 1968. For both males and females in the three 10-year age groups, death rates for this cause have decreased by 3-5 percent annually, compared with earlier (1950-54 and 1955-67) annual declines of 1-2 percent among males and 1-3 percent among females (figure 4).

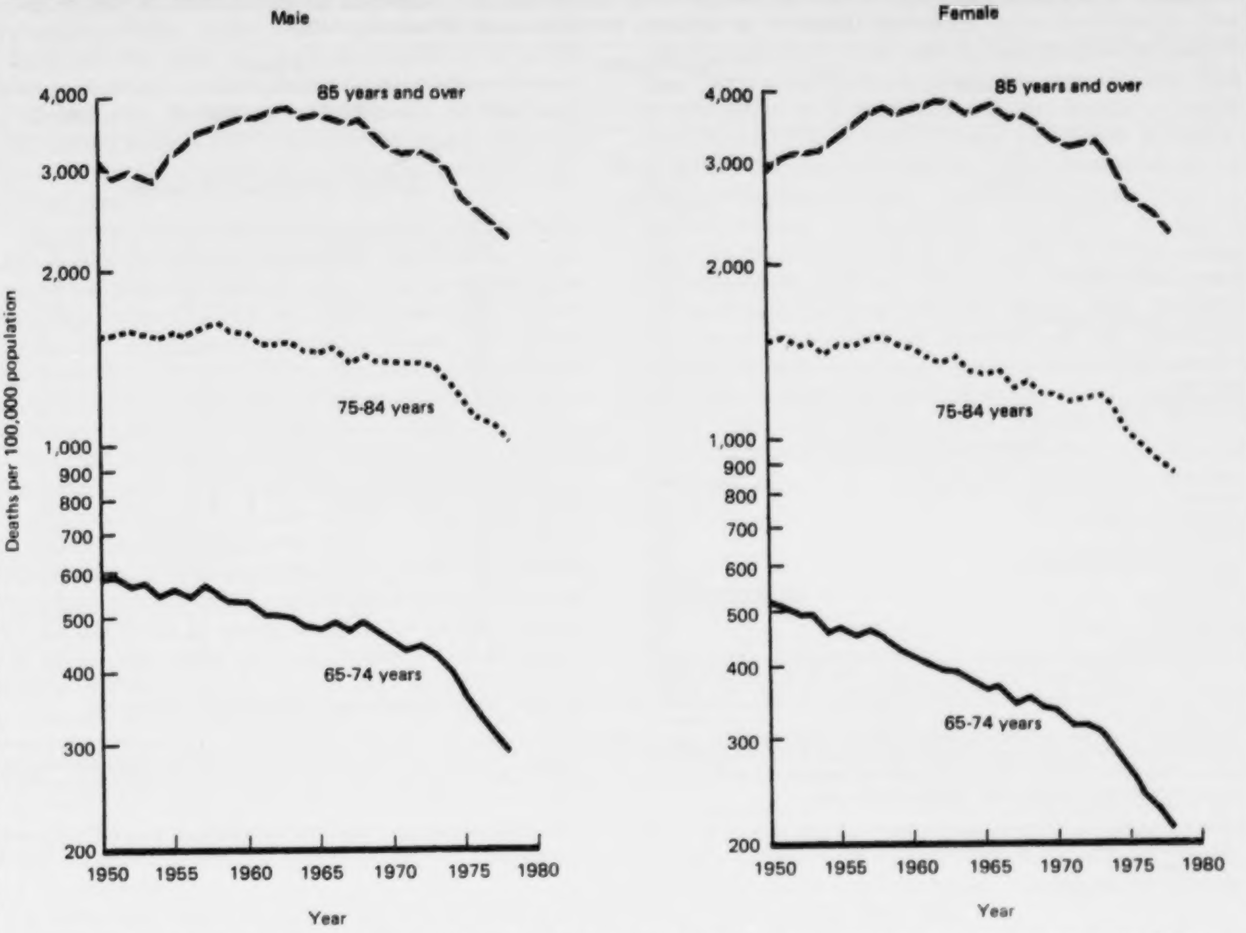
From 1950 through 1967, annual mortality decreases among the elderly under 85 years of age were greater for females than for males. Since 1968, mortality reductions have become similar for males and females because of the accelerated reduction in mortality among males. While decreases in mortality from heart disease have slowed since 1975, stroke mortality decreases among the elderly have accelerated to 5-7 percent annually.

The sex ratio in stroke mortality has been increasing slowly among the elderly under 85 years of age. Most of the increase occurred during 1950-67. At the oldest ages, female stroke mortality rates have been similar to the male rates. Since the 1960's, the sex ratio at 85 years of age and over has been very near 1.00.

Cross-National Comparisons

Current Situation—1977

Comparison of age-adjusted death rates for males and females 65 years of age and over places the United States in a favorable position relative to other selected industrialized countries. Eight countries were selected for comparison with the United States as illustrative of economically advanced, industrialized countries with reasonably complete vital statistics.



NOTES: Death rates for the group 85 years of age and over in 1970 are based on population estimates revised by the U.S. Bureau of the Census to correct for overestimates of the group 100 years of age and over. See footnote 3 in text for more complete discussion. ICDA codes are as follows: for 1950-67, 330-334 and for 1968-78, 430-438.

SOURCES: National Center for Health Statistics: *Vital Statistics of the United States*, Vol. II, 1950-76. Public Health Service. Washington. U.S. Government Printing Office, and 1977-78 to be published, and unpublished data.

Figure 4. Death rates for cerebrovascular diseases among persons 65 years of age and over, according to sex and age: United States, 1950-78

In 1977, the most recent year of comparable data, the age-adjusted death rate for elderly males was 60.3 deaths per 1,000 persons in the United States (table C). Higher age-adjusted death rates are noted in England and Wales, the German Federal Republic, Australia, and France. Rates in the remaining countries, Netherlands, Sweden, Japan, and Canada, were only slightly lower than in the United States.

For females, only Canada's age-adjusted rate was lower than the U.S. rate, and the rate in the Netherlands was practically the same as that in the United States (table C). The age-adjusted death rate for females in England and Wales was 22 percent higher than in the United States; in the German Federal Republic, it was 25 percent higher than in the United States.

For the most part, U.S. death rates for males and females 65-79 years of age were lower than the rates in Australia, England and Wales, and the German Federal Republic, but they were higher than the rates in Japan, Sweden, the Netherlands, France, and Canada. For those 80-84 and 85 years of age and over, the U.S. rates were lower than those of any of the comparison countries, with the exception of Canada where the rate for those 80-84 years of age was about the same. Overall, male and female death rates in England and Wales and the German Federal Republic were higher than in most countries, while male death rates in Japan and female death rates in France were lower for those under 80 years of age than in most other countries.

In each country, the sex ratio decreased with increasing age. At 65-69 years of age, the ratio was highest in France, with mortality being 2.4 times higher for males than for

Table C. Age-adjusted death rates for 1977 and average annual percent change in death rates for 1950-54, 1955-67, 1968-77 for persons 65 years of age and over, according to sex: Selected countries

Sex and country	Age-adjusted rate[1] for 1977	Period			
		1950-77	1950-54	1955-67	1968-77
Male	Number per 1,000 population	Average annual percent change			
Australia	65.4	-0.2	-0.8	0.1	-1.6
Canada	58.5	-0.3	-1.2	-0.4	-0.8
England and Wales	72.1	-0.3	-1.1	-0.3	-1.0
France	63.7	-0.6	-0.7	-1.0	-0.3
German Federal Republic	70.9	0.1	1.2	-0.1	-1.2
Japan	56.6	-1.6	-2.2	-1.0	-2.6
Netherlands	60.1	0.3	-0.3	0.1	-0.2
Sweden	58.5	-0.2	-1.2	-0.1	-0.1
United States	60.3	-0.3	-1.5	0.2	-1.5
Female					
Australia	38.7	-1.0	-1.6	-0.8	-2.1
Canada	33.8	-1.6	-2.6	-1.6	-1.9
England and Wales	42.5	-1.0	-3.1	-0.9	-1.0
France	35.4	-1.5	-1.4	-1.8	-1.2
German Federal Republic	43.7	-1.2	-0.3	-1.7	-2.1
Japan	38.0	-2.0	-2.8	-1.4	-2.7
Netherlands	35.0	-1.5	-1.6	-1.7	-2.3
Sweden	35.7	-1.7	-1.7	-1.6	-1.9
United States	34.9	-1.3	-2.3	-1.0	-2.3

[1] Age adjusted by the direct method to the population 65 years of age and over in the United States as enumerated in 1940, using 5 age groups.

NOTE: The average annual percent change was calculated by fitting a regression line to the logarithm of the death rates for every year. The slope of the line is the estimate of the annual rate of change. Death rates for the population 85 years of age and over (used in the calculation of the United States age adjusted death rate) in 1970 are based on populations revised by the U.S. Bureau of the Census to correct for overestimates of the population 100 years of age and over. See footnote three in text for more complete discussion.

SOURCES: United Nations: *Demographic Yearbook 1966, 1974, 1978.* Pub. Nos. 67-XIII-I, ST/ESA/STAT/R/3, ST/ESA/STAT/SER.R/8. New York. United Nations, 1967, 1975, and 1979; personal communication; National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

females. The U.S. ratio was 2.05. France retained the highest ratio through 75-79 years of age. Ratios in Canada and the United States at 80-84 years of age and 85 years of age and over and in Sweden at 85 years of age and over were as high as in France. The lowest ratio was observed in Japan for each age group. Mortality sex ratios in Canada and England and Wales most nearly paralleled the U.S. ratios, age for age.

Recent Trends

From 1968 to 1977, the decline in the age-adjusted death rate among the elderly in the United States was faster than in most other countries considered for comparison (table C). For most countries, mortality decline during this period was much more rapid than during the years 1955-67, and, for the most part, the declines for females outpaced the declines for males. Regardless of sex, Japan showed faster rates of mortality decline than the other countries, including the United States. At 85 years of age and over, the rate of mortality decline in the United States exceeded that of all other countries.

Conclusion

After a period of rapid mortality decline in the 1940's and early 1950's, death rates among the elderly U.S. population began to stabilize. Around 1968, mortality for the older population began to decline even more sharply than before. The result of declining mortality is higher life expectancy. In 1940, life expectancy at birth had not yet reached 65 years of age, but by 1978, it was just beyond 73 years of age. During these 38 years, life expectancy at 65 years of age increased by 3½ years to 16.3 years. In 1978, 73 percent of those reaching 65 years of age could expect to celebrate a 75th birthday, compared with 61 percent in 1940.

Inasmuch as heart disease is the leading cause of death among the elderly, mortality trends from this cause parallel the decline for all causes combined. Since 1968, death rates from stroke have been falling even more rapidly than those from heart disease. Cancer has been the only major cause of death among the elderly that has continued to show increasing death rates, with the rapid increases since 1968 primarily associated with lung cancer.

The decline in mortality among the elderly population is not unique. While trends in mortality differ across age groups and over time, the mortality experience of people 25-64 years of age has been similar to that of those 65 years of age and over, decreasing by 2-3 percent per year since 1968. Before the late 1960's, mortality decline in the group 25-64 years of age was also slow, averaging less than 1 percent per year.

The recent, sustained accelerations in total mortality decline were not foreseen during the early 1960's. At that time, it was generally believed that further decreases in the death rate for the United States "as experienced in the past cannot be anticipated" (National Center for Health Statistics, 1964). For the elderly, only among white females could the death rate be expected to show further decreases (National Center for Health Statistics, 1964).

However, the death rate did decrease and even faster than before. But, can the decline continue in the future at the same pace as in the past decade? Will it taper off gradually, or will it continue to accelerate before it slows? These uncertainties have led those responsible for national population projections to consider more than one assumption about the future course of mortality decline. Population projections based on single assumptions of regular, small declines in mortality rates at older ages are no longer considered "a safe course to follow" (U.S. Bureau of the Census, 1979). Thus, alternative mortality assumptions result in projected increases in the size of the elderly population that range from 32 million, 29 percent more than in 1979, to as high as 37 million in the year 2000, a 49-percent increase since 1979 (U.S. Bureau of the Census, 1977; Rice, 1978).

In either case, there are major implications for health care utilization, for the Social Security system, and for almost all social and health-related services that reach the elderly. For example, while only 5 percent of today's elderly live in nursing homes, some 22 percent of the oldest group—those 85 years of age and over—reside in such institutions (National Center for Health Statistics, 1979). With the elderly population and particularly the oldest group projected to increase dramatically in the coming decades, nursing homes are likely to face large increases in their resident population. Projected increases that assume constant utilization rates are as high as 2.4 million elderly residents in the year 2000,[6] more than twice as many as in 1977.

The Social Security system is deeply enmeshed in the impact of the aging population. For example, the system will soon be faced with the aging of the "baby-boom" generation. The number of beneficiaries per 100 covered workers is projected, under an intermediate series, to increase from 30 in 1979 to 40 in 2015 to 52 in 2030 (Social Security Administration, 1980). To accommodate this rapid increase in the elderly population, the Social Security system will have to make certain adjustments.

The societal impact of the large increase in the elderly population is highly dependent upon their health. The elderly population in the years to come may not be a sicker one. Factors leading to the declines in mortality may lead to changes in both morbidity and the patterns of health care (Rice, 1978; National Center for Health Statistics, 1978; U.S. Bureau of the Census, 1979). Fries, in his model for national health (1980), "foresees continued decline in premature death and emergence of a pattern of natural death at the end of a natural life span." Morbidity would be compressed until near the end of the life span when "everything comes apart at once" (Fries, 1980). To reach this target, the ability to postpone chronic illness by changes in lifestyle is crucial. Whether we will face, on the one hand, a sicker and more expensive to care for society or, on the other hand as Fries suggests, one with an average life span of approximately 85 years is still open to speculation.

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[6] Assumes declining mortality through the year 2000 at the same rate observed during 1966-76.

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Prevalence and Management of Diabetes

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Introduction

Diabetes mellitus is a diagnostic term used to refer to "a genetically and clinically heterogeneous group of disorders that share glucose intolerance in common" (National Diabetes Data Group, 1979). In the past, different types of diabetes were classified according to their time of onset (i.e., juvenile-onset as opposed to adult-onset diabetes), and levels of glucose intolerance were taken as indications of different stages of the disease (e.g., pre-diabetes, latent diabetes, borderline diabetes, and overt diabetes). Recent research related to different types of diabetes has shown that diabetes requiring insulin for survival can occur at any age and that borderline and other less severe clinical states do not necessarily develop into diagnosable diabetes. Therefore, international experts on diabetes presently find it useful to (1) distinguish diabetes *per se* from all other forms of impaired glucose intolerance, and (2) distinguish insulin-dependent diabetes from noninsulin-dependent diabetes. However, these newer distinctions are not yet reflected in available national statistics on diabetes. For this and other reasons, the magnitude, heterogeneity, and scope of this important public health problem are only partially indicated by existing prevalence and mortality statistics.

In 1979, an estimated 5.2 million people in the civilian noninstitutionalized population of the United States were known to have diabetes. In 1977, about 189,000 nursing home residents (14.6 percent) were reported to have diabetes (National Center for Health Statistics, 1979). Diabetes experts have long suspected, however, that in addition to the number of persons with diagnosed diabetes a comparable number may have undiagnosed diabetes.

In 1978, nearly 34,000 people were reported to have died from diabetes, making diabetes the sixth leading cause of death in the United States (National Center for Health Statistics, 1980). This ranking is generally considered to be an underestimate of the impact of diabetes on mortality, since this statistic does not reflect the contribution of diabetes to other immediate causes of death (Tokuhata, 1975). An adequate assessment of the magnitude of the problem must also take into account the long-term complications of diabetes, particularly coronary heart disease, peripheral vascular disease, and diseases of the eyes and kidney (National Diabetes Data Group, 1978).

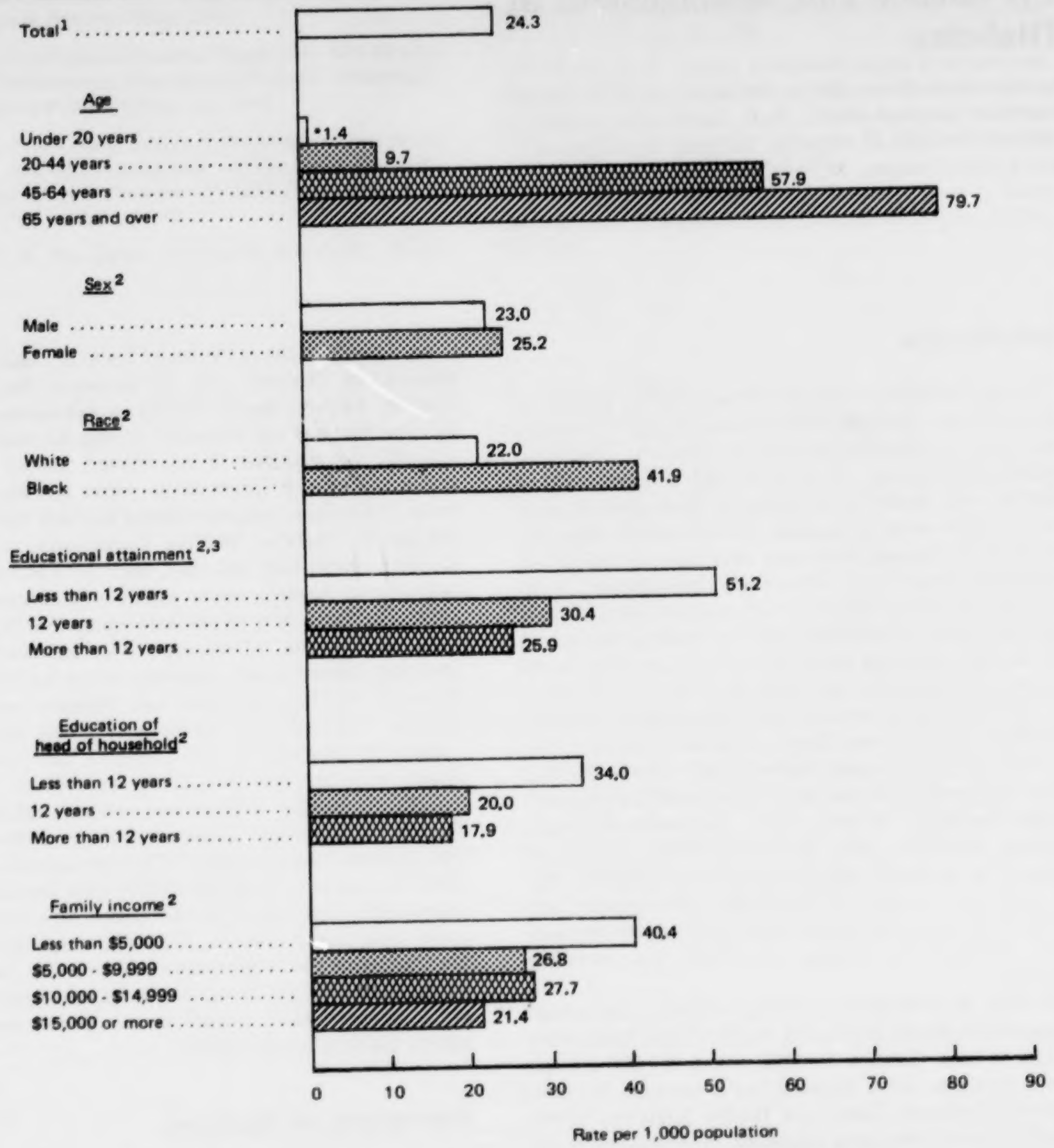
As a result of the activities of the U.S. National Commission on Diabetes and its successor the National Diabetes Advisory Board, interest in diabetes mellitus and its complications has increased among lay, medical, and scientific communities in the United States. Activities within the Federal Government reflect this increased interest. Biomedical research funding has been increased; an interagency Diabetes Mellitus Coordinating Committee has been established; and the Center for Disease Control has initiated diabetes control activities in 20 States. In addition, the National Diabetes Data Group (NDDG) and the National Diabetes Information Clearinghouse (NDIC) have been formed as new programs within the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases of the National Institutes of Health (NIH).

Since its inception in 1977, NDDG has collaborated closely with the National Center for Health Statistics (NCHS) to develop accurate and complete epidemiologic data on the scope and impact of diabetes mellitus in the United States. More recently, NCHS has collaborated with NDIC in analyzing available NCHS data bearing on the educational implications of the health care practices of adults with known diabetes. This article highlights important results of the collaborative analyses thus far undertaken. After a discussion of the prevalence of diabetes, the article summarizes the current data on the management of known diabetes among adults.

Prevalence of Diabetes

In 1979, about 2.4 percent of all U.S. civilians living outside institutions had known diabetes. This represents a six-fold increase in the relative frequency of known diabetes during the past 45 years. Known diabetes is relatively more common among older persons (figure 1). Moreover, among persons with diagnosed diabetes, more than 1 out of 3 people are 65 years of age and over.

Even after taking this age differential into account, known diabetes is more common among women, black people, the less educated, and those with low family income (figure 1). More detailed data from 1976 indicate that, among age-sex-race categories of the population, black women in their middle and later years have the highest rates of known diabetes. Within each age-sex-race



[1] Includes all other races not shown separately and those for whom education and family income were unknown.

[2] Age adjusted by the direct method to the 1979 civilian noninstitutionalized population, using 4 age intervals.

[3] Data for persons 20 years of age and over.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Unpublished data from the 1979 National Health Interview Survey.

Figure 1. Persons with known diabetes, according to selected characteristics: United States, 1979

category, those with less education have a greater prevalence of known diabetes (table A). The greater prevalence of obesity among the less educated and among black women may partly explain the higher rates of diabetes among these segments of the population (West, 1978).

During the past 45 years, there has been a marked increase in the prevalence of known diabetes as ascertained

Table A. Persons 20 years of age and over diabetes, according to educational attainment, age, sex, and race: United States, 1976

Age, sex, and race	Educational attainment		
	All levels	Less than 12 years	12 years and more
20 years and over[1]	Rate per 1,000 persons		
Male	33.3	40.3	28.7
White	31.8	38.4	27.8
Black	44.3	49.8	41.0
Female	36.6	50.5	26.7
White	34.2	47.6	25.7
Black	58.8	67.0	42.3
20-44 years			
Male	8.5	13.6	7.1
White	8.4	13.2	7.1
Black	8.4	*15.0	*8.1
Female	13.8	21.7	11.5
White	12.8	21.0	10.8
Black	20.8	25.4	17.3
45-64 years			
Male	49.8	60.8	42.7
White	47.3	57.8	41.1
Black	71.8	76.9	67.7
Female	49.3	73.0	34.3
White	44.9	67.1	32.3
Black	92.5	105.1	74.5
65 years and over			
Male	82.7	88.4	72.6
White	79.1	83.8	70.0
Black	103.3	111.5	*97.2
Female	87.1	101.4	61.9
White	84.1	97.4	62.3
Black	118.3	129.7	*61.6

[1] Age adjusted by the direct method to the 1976 civilian noninstitutionalized population, using 3 age intervals.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Unpublished data from the 1976 National Health Interview Survey.

through national household health interview surveys (Harris, 1980). The relative frequency of known diabetes has increased sixfold, from approximately 0.4 percent in 1935-36 (the period immediately after the discovery of insulin in 1929) to 2.4 percent in 1979.

The major increase in the prevalence of known diabetes has occurred during the last 20 years. Between 1960 and 1979, the relative frequency of known diabetes increased an average of about 7.7 per 10,000 persons per year. During the 25 years earlier, the average annual increase in the rate of known diabetes was only about 2.2 per 10,000 persons.

While the aging of the population may account for part of the change in prevalence, all ages and both sexes have experienced increases in the rate of diabetes. In the last two decades, however, the relative increases have been greater for younger persons than for older persons. For example, between 1958-60 and 1978, the rate of diabetes tripled for persons 44 years of age and under, increased two and one-half times for persons 45-64 years, and doubled for persons 65 years of age and over.

Preliminary evaluation of these trends suggests that the change in the prevalence of known diabetes has resulted from improvements both in detection of diabetes among high-risk groups and in survivorship among persons with diabetes. But whether a reservoir of undetected diabetes exists, as many experts within the field have long suspected, remains to be answered (Remein, 1959). NDDG and the Division of Health Examination Statistics of NCHS are collaborating on a study that will shed some light on this issue.

In this study, data from the 1976-80 National Health and Nutrition Examination Survey (NHANES II) will be analyzed to accurately ascertain the magnitude of undiagnosed diabetes. In NHANES II, more than 4,000 persons 20-74 years of age were tested for diabetes by measuring their fasting plasma glucose and by performing a 2-hour 75 grams oral glucose tolerance test. Specific criteria applied to these data will permit estimation of undiagnosed diabetes in the United States.

Management of Known Diabetes Among Adults

Proper care and management of diabetes are essential for two reasons. No known cure for diabetes exists, and many of the acute and long-term complications of diabetes may be checked in varying degrees by appropriate treatment. Prescriptions for such care generally include an ongoing relationship with the health care system. Depending on the type and severity of diabetes and other patient characteristics, selective use or an optimal mix of diet, exercise, and administration of insulin or oral hypoglycemic agents constitute the essentials of treatment. A high premium is also placed on good health practices, the use of preventive health services, and patient and family knowledge of the contribution of treatment modes to successful management of diabetes. Patient knowledge is important because, aside from regular contacts with a physician or other health care practitioners, health care of diabetes is primarily self-care.

Data relating to these management aspects of known diabetes are obtained through the National Health Interview Survey (NHIS) and are presented herein for selected years between 1973 and 1978. After a description of the utilization of health services (including the use of preventive services) by persons with known diabetes, the remainder of this article highlights diabetics' uses of diet, medication, and exercise and their compliance with other good health practices. The analysis is limited to diabetics 20 years of age and over for two reasons. In some instances, sample cases for those under 20 years of age were too few to be included in the analysis; in other instances, the particular information had been collected only for persons 20 years of age and over. The intent of the discussion is to describe important aspects of diabetes among adults and thereby complement the current reviews of management aspects of diabetes among children and youths (Drash, 1979).

Utilization of Health Services

Treatment of diabetes requires a careful balancing of diet, insulin levels, and exercise in the dynamic context of a diabetic's personal, social, and medical situation (Krall, 1978). Thus, an ongoing relationship with the health care system is essential. Diabetics are generally in accord with this requirement.

Regular Sources of Health Care

Virtually all adult diabetics have well-defined points of entry into the health care system. In 1978, more than 9 out of 10 persons with known diabetes reported having a particular place to which they could go when they needed medical help or advice. Moreover, about half of the small proportion (6 percent) of adult diabetics without one regular source of care reported the main reason for not having one regular source of care was that they routinely saw different physicians depending upon the nature of their problem at the time.

Among diabetics with a regular source of care, private doctors' offices and doctors' clinics, including health maintenance organizations and other prepaid group practices, predominated as the usual places of care. In 1978, about 87 percent of all adult diabetics with a regular source of care identified a private doctor's office or a doctors' clinic as the place to which they usually went when they needed medical help or advice.

Overall, in 1978, only about 1 out of 10 adult diabetics with a regular source of care routinely received medical care from hospital outpatient departments. Moreover, more than 4 out of 5 diabetics with a regular source of care also had a particular doctor at the usual source of care. However, important variations existed in each of these characteristics according to race and income. For example, while only about 5 percent of white diabetics and black nonpoor (family income $7,000 or more) diabetics with a regular source of care used a hospital outpatient clinic or emergency room as the usual source of care, 39 percent of all poor (family income less than $7,000) black diabetics reported hospital outpatient departments as the regular source of care.

Use of Physicians

In 1976, about 9 out of 10 adult diabetics had contacted a physician one time or more during the past year. This was true for poor and nonpoor diabetics alike, irrespective of age, race, or sex. Moreover, about 8 out of 10 indicated that during that same period of time they had seen a physician specifically about their diabetes. During that same year, adult diabetics collectively averaged about 11 physician visits (including telephone contacts) per person per year. Except for those 65 years of age and over, diabetics with 13 years or more education had higher rates of physician contact than persons with less education.

Use of Preventive Health Services

Adequate evaluation of the utilization of health services must take into account the need for the service. A striking example of this injunction is found in the data of table B. Persons with diabetes tend to make slightly greater use of eye exams, glaucoma tests, electrocardiograms, and chest X-rays than similarly aged nondiabetics do. It is surprising that the differential is not larger; diabetics have a much greater need for these preventive services because of complications resulting from the disease. For example, diabetics are at greater relative risk of eye and heart complications (Bradley and Ramos, 1971; Bradley, 1971). Yet, in 1973, only 55 percent of adult diabetics were estimated to have had an eye exam during the past 2 years; only 41 percent, to have had a glaucoma test during the past 2 years; and only 53 percent, to have had an electrocardiogram during the past 2 years.

Detailed analysis of the use of these preventive health services among adult diabetics is constrained by the size of the NHIS diabetic subsample. Nonetheless, limited analyses indicate important income and educational differentials in the use of some of these preventive services, and these differentials parallel those in the general population. For example, in 1973, poor female diabetics were relatively less likely than their nonpoor counterparts to have had a Pap test in the past year, a tendency that was noted for various age and educational categories of female diabetics.

The percent of persons having one dental visit or more in the past year is not generally considered a measure of the use of preventive health services. Nonetheless, given higher levels of periodontal disease among diabetics, regular dental visits should be a preventive health practice among diabetics (Gottsegen, 1970). However, data for this preventive health service indicate reason for concern. Although almost half of the nondiabetic adult population contacts a dentist in the course of a year, only about a third of all diabetics 20 years of age and over do. Certain aspects of this finding require further study to determine whether it reflects: (1) a greater proportion of endentulous persons associated with the older age composition of diabetics as a group; (2) differences in socioeconomic characteristics known to be associated with the use of dentists, such as educational attainment; and (3) a greater impact on diabetics than on nondiabetics of economic barriers in obtaining dental services.

Inpatient Use of Short-Stay Hospitals

Based on data collected in the 1976 NHIS, about 3 out of 10 diabetics were in a hospital at the time of their diagnosis; and of these, about 1 out of 3 had been

Table B. Use of selected preventive health services, according to diabetes status and age: United States, 1973

Preventive health service and age	Total	Diabetes status	
		Diabetic	Nondiabetic
	Percent of persons		
Eye exam[1]			
Total	50.3	[2]57.0	[2]50.1
20-44 years	48.1	58.6	48.0
45-64 years	54.5	56.8	54.4
65 years and over	48.4	52.4	48.1
Glaucoma test[1]			
Total	33.3	[2]40.5	[2]33.0
40-44 years	26.4	42.7	26.1
45-64 years	34.8	39.5	34.6
65 years and over	34.0	41.3	33.3
Chest X-ray[1]			
Total	44.6	[2]59.3	[2]44.1
20-44 years	43.9	59.2	43.7
45-64 years	47.2	63.3	46.4
65 years and over	41.5	51.2	40.7
Electrocardiogram[1]			
Total	33.0	[2]51.8	[2]32.0
40-44 years	26.1	41.2	25.8
45-64 years	32.7	54.3	31.7
65 years and over	37.3	52.4	36.0
Pap test[3,4]			
Total	47.2	[2]46.5	[2]47.2
20-44 years	60.7	59.2	60.7
45-64 years	39.3	38.4	39.4
65 years and over	22.0	24.0	21.8
Breast exam[3,4]			
Total	49.1	[2]53.6	[2]49.0
20-44 years	60.4	64.9	60.3
45-64 years	42.5	46.5	42.3
65 years and over	28.5	33.5	28.0
1 dental visit or more[3,5]			
Total	47.3	[2]39.2	[2]47.6
20-44 years	53.1	46.3	53.1
45-64 years	46.5	34.6	47.1
65 years and over	29.7	24.5	30.2

[1] During past 2 years.
[2] Age adjusted by the direct method to the 1973 or 1976 civilian noninstitutionalized population, using 3 age intervals.
[3] During past year.
[4] Percent of women.
[5] Data for 1976.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Unpublished data from the 1973 and 1976 National Health Interview Surveys.

hospitalized because of suspected diabetes. Also, about 1 out of 5 of all adult diabetics had been hospitalized at some time for their diabetes; but this proportion varied widely depending on how long the person had been a diabetic. The likelihood of being hospitalized for diabetes also varies by the severity of the disease as indicated by the major type of therapy. In 1976, among those for whom insulin was the major form of therapy, 57 percent had been hospitalized at some time for their diabetes; among those being treated primarily with oral agents, 14 percent had been; and among those treated primarily with a written diet, about 10 percent had been. Given the variety of acute and chronic complications that accompany diabetes, it is not surprising that adult diabetics collectively make greater use of short-stay hospitals than similarly aged nondiabetics do. In 1976, adult diabetics were about twice as likely as nondiabetics to have had one or more short-stay hospital episodes in the past year.

Problems Obtaining Health Care

Despite the fact that diabetics use both short-stay hospitals and physicians more than nondiabetics do, obtaining health care is not without its problems. In 1977, about 15 percent reported that they had one problem or more getting medical care in the past 12 months. That same year, 8 percent indicated that they had been prevented from getting medical care by one problem or more. In 1974, about 1 out of 10 diabetics reported that they were not getting all the health care that they felt they needed.

Treatment

While individual treatment regimens vary, the essentials of treatment for diabetes are diet, insulin, oral hypoglycemic agents, and exercise (Krall, 1978).

Diet

Manipulation of diet traditionally has been a key feature in the treatment of a person with diabetes (American Diabetes Association, 1979b). Based on the 1976 NHIS, about 4 out of 5 diabetics have received a written diet at some time, and about two-thirds of this group follow the diet they have been given.

Diet is important in the prevention and treatment of diabetes because obesity is a major risk factor in the etiology of noninsulin-dependent diabetes and because persistent obesity after the onset of diabetes impedes the achievement and maintenance of normal blood glucose levels. Nonetheless, data from the 1977 NHIS indicate that about 50 percent of all diabetics 20 years of age and over are obese and that the relative likelihood of such obesity among diabetics is inversely associated with educational attainment.

Insulin

Although some types of diabetes can be controlled with diet alone, other types require insulin therapy either because the pancreas does not produce any insulin or because available body insulin is inadequate to regulate the level of glucose in the blood. About 1 out of 5 adult diabetics were current insulin users in 1976. Optimal care for these diabetics involves their understanding the effects of insulin in lowering the level of blood sugar. In 1976, just more than 4 out of 5 diabetics using insulin generally knew what an insulin reaction was. But only 60 percent of this "knowledgeable" group correctly knew that too much food would not cause an insulin reaction; only 60 percent, that too much exercise could cause one; and only 70 percent, that an insulin reaction was not the same as a diabetic coma. In sum, only 3 out of 10 of these "insulin knowledgeables" answered all three of these specific questions about insulin correctly; and only about 55 percent answered at least two specific questions correctly. On each of these indicators, insulin users with less than 12 years of education were the least knowledgeable.

Since persons having an insulin reaction may behave as if intoxicated, all diabetics and particularly those using insulin should carry or wear something that identifies them as diabetics. In 1976, about two-thirds of those currently using insulin carried or wore diabetic identification. However, only about a third of all diabetics were estimated to carry or wear diabetic identification, a practice that varied little according to age, sex, or race.

Oral Hypoglycemic Agents

For more than two decades, a diabetic whose pancreas was able to produce some insulin has been considered treatable with various kinds of pills, tablets, or capsules known as oral hypoglycemic agents—hypoglycemic, because they act to lower the level of sugar in the blood. Considerable controversy exists in the use of certain oral agents, primarily as a result of the University Group Diabetes Program study (Food and Drug Administration, 1975; American Diabetes Association, 1979a; American Medical Association, 1980). As a result of this study, some diabetologists (Steinke and Thorn, 1974) suggested that oral agents be used without reservation only under the following conditions: when dietary treatment is no longer sufficient, insulin use is not acceptable to the person, or only short-term use of such drugs is being considered. Nevertheless, in 1976, 2 out of 5 adult diabetics were currently using diabetic pills.

Exercise

Compared with the amount of attention given to medical care, diet, and medication, the role of exercise in the care and treatment of diabetes has been slighted until recently. Currently, exercise is viewed as an important complement to diet and medication in the treatment of diabetes (Kovisto and Sherwin, 1979). Diabetics apparently have also become more cognizant of the role of exercise. In 1976, 51 percent of diabetics felt that diabetics could exercise as much as other people, whereas in 1965, only 40 percent had expressed this belief.

With respect to differentials in amounts of physical fitness activities, data available from the 1977 NHIS indicate that educational attainment is positively associated with perceived physical activeness. Among diabetics 20-64 years of age, those with less than 12 years of education were less likely than those with 12 years or more of education to perceive themselves as being "as active" or "more active" than others their age.

Other Health Practices

Diet, insulin, oral agents, and exercise are essential tools used by physicians in developing individualized treatment plans for diabetics. These plans are prescribed with the intent of restoring the physiology of the diabetic patient to as near normal a state as possible so that the person may lead as normal a life as possible. However, other good health practices are important to the health and well being of the diabetic. Of particular importance are moderation in alcohol consumption and abstention from smoking.

With respect to alcohol consumption, data available from NHIS indicate that the vast majority of diabetics either abstain from alcohol or use alcohol with moderation. For example, in 1977, about 25 percent of all adult diabetics used beer, about the same proportion used wine, and only about 30 percent used liquor. In total, almost 43 percent used either beer or wine or liquor. Moreover, those diabetics who used these types of alcoholic beverages tended to do so infrequently and in small amounts. Contrary to other health practices, diabetics with less than 12 years of education were less likely to make any use of alcoholic beverages than those with more education were. Among alcohol users, those with less than 12 years of education were also more likely to be occasional users than those with more education were. These educational patterns in the use of alcohol were evident for both men and women.

Since smoking increases the chances of coronary heart disease to which diabetics are already at risk, it is important that diabetics refrain from smoking. Data from the 1977 NHIS indicate that about 31 percent of diabetic men and 23 percent of diabetic women were current smokers, compared with 40 percent of nondiabetic men and 32 percent of nondiabetic women. Among diabetic men but not among diabetic women, those with less than 12 years of education were more likely than those with more education to be current smokers.

Conclusion

This article has highlighted important aspects of the prevalence of known diabetes in the United States. It has also described major characteristics of the management of known diabetes among adults. One underlying theme has been the importance of education both as a correlate of the relative occurrence of diabetes and as a major dimension to be confronted in the treatment of diabetes. The inverse relationship between educational attainment and the rate of diabetes is illustrated by the following: About 58 percent of all adult diabetics have less than 12 years of schooling, and only 30 percent of nondiabetics have that amount of formal schooling. Moreover, the percent of persons with less than 12 years of education is even higher among certain subgroups that have the highest rates of known diabetes among age-sex-race categories of the population.

These findings have important implications for the planning, design, and evaluation of educational programs for persons with diabetes (Green, Lewis, and Levine, 1980). While notable exceptions exist, more educational materials are needed that can be understood by people with little formal schooling. In the management of diabetes, it is usually people with less than 12 years of education who either lack needed knowledge or who, because of that lack or other related reasons (Jenkins, 1980), do not comply with what is currently considered to be good health practices.

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Educational Differentials in Health Practices

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Introduction

Mounting evidence suggests that personal health practices contribute to physical health status and longevity, although this concept is far from new. The association between disease and lifestyles originated with Hippocrates (Brock, 1929). In his essay "On Airs, Waters, and Places," Hippocrates described the influence of the environment on the organism—not only physical factors such as climate and the character of the terrain, but also factors such as the habits and practices of various peoples as they relate to health and disease.

Alameda County Study

During the mid-1960's, the Human Population Laboratory in Alameda County, California, found a positive association between seven favorable health practices and good physical health status (Belloc and Breslow, 1972). The favorable health practices were as follows:
(1) never having smoked, (2) limiting alcohol consumption, (3) controlling one's weight, (4) sleeping an average of 7-8 hours a night, (5) engaging in physical activities,
(6) eating breakfast almost every day, and (7) not eating between meals. Each practice was found to have an independent relationship to health status, measured in terms of a seven-point scale ranging from severe limitation resulting from chronic conditions to healthy with no physical complaints and a high level of energy (Belloc, Breslow, and Hochstim, 1971). Furthermore, a consistent positive association was found between health practice score (number of favorable health practices) and physical health status.

Persons with favorable health practices in 1965 also had an advantage over persons with unfavorable practices in terms of mortality risk. Table A shows age-adjusted mortality rates as of 1974 among the 1965 Alameda cohort for each of the seven health practices.

One concern in this area of research is the possible circularity of the relationships observed. That is, poor health practices may be a consequence rather than a cause of poor health, because people who are ill may not be able to engage in certain health practices. For example, they may not sleep well, they may be underweight, or they may not be able to exercise. However, longitudinal data from Alameda County indicate that the observed relationships between health practices and subsequent health status and mortality were not attributable to poor health at the time of the 1965 survey.

Using data from the 1974 mortality followup, Breslow and Enstrom (1980) analyzed the relationship between number of health practices and mortality for the 1965 cohort according to the year in which death occurred. Although the relationship was strongest in the first 2½ years, it remained significant throughout the period (table B). If the association between health practices and mortality had resulted from initial poor health, the relationship should have largely disappeared by the end of the decade, as those who were ill at the time of the survey would be expected to die early in the followup period. Since this was not the case, the data indicate a positive relationship between favorable health practices and survivorship.

Other findings from the 1974 data show that survivorship was also associated with strong social and community ties reported at the time of the 1965 survey (Berkman and Syme, 1979). This relationship was found to be independent of self-reported physical health status, year of death, socioeconomic status, personal health practices, number of favorable health practices, and utilization of preventive health services.

Longitudinal analysis of the health status of survivors 9½ years after the 1965 survey revealed a consistent positive association between five of the health practices (never having smoked cigarettes, limiting alcohol consumption, controlling one's weight, sleeping an average of 7-8 hours a night, and engaging in physical activities) and physical health status (Wiley and Camacho, 1980). The health status score employed as the outcome variable in this analysis was adjusted for sex, age, and level of health in 1965. By adjusting for baseline health status, the problem of possible circularity in the relationship between health practices and health status was largely eliminated.

While other investigators had demonstrated a link between health practices and health outcomes in specific subgroups (Pratt, 1971; Palmore, 1970), the Alameda study was the first to examine the relationship between routine daily activities and health status in a general community population. The findings from this study have drawn attention to the potential importance of personal lifestyle for health and well being and have stimulated additional research to assess their generalizability for the U.S. population.

National Goals

In 1977-78, a "prevention initiative" was undertaken by the U.S. Department of Health and Human Services. The prevention initiative had two purposes: to set forth specific actions that people could undertake to prevent disease and improve their health and to describe the role of Federal and State agencies and the private sector in helping people achieve these objectives. Activities of this initiative included identifying types of data needed to make policy decisions concerning the direction and scope of health promotion efforts at the national level.

Table A. Age-adjusted death rates[1] for the 1965 Alameda County cohort, according to sex and health practices: July 1965–December 1974

Health practice	Sex: Male	Sex: Female
	Number per 100 persons	
Total cohort	12.7	8.6
Hours of sleep		
6 hours or less	15.6	9.7
7 hours	11.5	6.8
8 hours	11.1	8.1
9 hours or more	13.9	10.4
Desirable weight for height		
Underweight:		
10 percent or more	21.8	11.7
5–10 percent	15.6	6.3
Between 5 percent underweight and 5 percent overweight	13.4	7.9
Overweight:		
5–10 percent	9.0	6.8
10–20 percent	10.3	7.7
20–30 percent	10.8	7.7
30 percent or more	15.5	[illegible].0
Smoking status		
Never	9.1	7.0
Formerly	10.4	12.0
Currently	15.4	10.6
1 pack per day	12.6	10.6
1–1½ packs per day	16.2	10.4
2 packs or more per day	20.0	*
Physical activity		
Often engages in active sports	6.8	*
Often swims, gardens, or exercises	11.8	6.5
Sometimes engages in sports or swims	12.4	7.6
Sometimes gardens or exercises	15.0	8.2
None of the above	18.6	16.1
Alcohol consumption		
None	11.9	9.4
1–2 drinks at a time	11.1	7.4
3–4 drinks at a time	12.2	7.4
5 drinks or more at a time	16.2	*
Breakfast eating		
Almost every day	11.6	7.8
Rarely or sometimes	16.3	10.0
Snacking		
Rarely or occasionally	11.9	8.3
Almost every day	14.3	8.1

[1] 9½-year death rates, age adjusted by the direct method to the total 1965 survey sample.

SOURCE: (Breslow, L., and Enstrom, J. E., 1980.)

Table B. Standardized mortality ratios[1] for the 1965 Alameda County cohort, according to followup interval, 1965 health practice score,[2] and sex: July 1965–December 1974

1965 health practice score and sex	Total 9½ years	Followup interval: First 2½ years	Followup interval: Next 3 years	Followup interval: Last 4 years
Both sexes				
0–3	178	252	169	142
4–5	109	101	108	114
6–7	75	67	79	77
Male				
0–3	193	253	189	155
4–5	109	104	111	111
6–7	71	57	69	78
Female				
0–3	160	250	143	126
4–5	109	98	105	117
6–7	80	78	89	75

[1] The standardized mortality ratio is the ratio of the observed number of deaths to the expected number of deaths using a base population of 100. Expected deaths were based on age-specific proportions dying in the total male and female samples.

[2] Health practice score is number of positive responses to the following items: never smoked cigarettes; drink not more than 4 drinks at a time; often or sometimes engage in active sports, swim or take long walks, or often garden or do physical exercises; weight for men between 5 percent under and 20 percent over desirable weight for height, and for women not more than 10 percent over desirable weight for height; usually sleep 7 or 8 hours; eat breakfast almost every day; eat between meals once in a while, rarely, or never.

SOURCE: (Breslow, L., and Enstrom, J. E., 1980.)

As an outgrowth of the prevention initiative, broad national goals were presented in the volume *Healthy People*, issued by the Surgeon General in 1979 (Office of the Assistant Secretary for Health and the Surgeon General, 1979a and 1979b). In this volume, past accomplishments in prevention were noted, major health problems were identified, and broad national goals for reducing death and disability were set. In a second volume, *Promoting Health/Preventing Disease: Objectives for the Nation,* specific and quantifiable objectives were delineated for 15 priority areas that are key to the attainment of the major goals (Public Health Service, 1980).

Several of these objectives relate directly to the health practices found by the Human Population Laboratory (HPL) to be associated with good health. For example, smoking, excessive alcohol consumption, lack of physical exercise, and poor nutrition are identified as risk factors for such health problems as heart disease, cancer, stroke, and respiratory infections (National Center for Health

Statistics, 1980b; Dawber, 1980). Whereas the Alameda study illustrated the consequences of poor health practices in terms of a spectrum of physical health and in terms of mortality, the prevention objectives identify relationships between health practices and specific diseases and disabilities.

Prior to the prevention initiative, data regarding the prevalence of the seven Alameda health practices among U.S. adults were collected as a supplement to the 1977 National Health Interview Survey. These data have been analyzed according to sex, race and ethnicity, age, income, and education (National Center for Health Statistics, 1980a).

Current Research

The National Survey of Personal Health Practices and Consequences (NSPHPC), a panel study, was conducted in 1979 and 1980 to provide data required by the prevention initiative. This was a telephone survey of adults 20-64 years of age, funded by the Office of Health Information, Health Promotion and Physical Fitness and Sports Medicine, Office of Disease Prevention and Health Promotion and conducted by the National Center for Health Statistics. It was designed to collect data on the extent and distribution in the population of personal health practices, their stability over time, and their relationship to morbidity and mortality. The survey investigated six of the seven Alameda health practices as well as a variety of other health maintenance behaviors and characteristics such as use of seatbelts, brushing teeth, flossing teeth, perceived control over health, and care of one's own health.

NSPHPC addresses three key issues arising out of the findings from the Alameda County study:

- The generalizability of the Alameda County findings to the U.S. population.
- The extent to which other health-related behaviors show similar relationships to health.
- The extent to which observed outcomes are associated with engaging in specific health practices or are associated with a more generalized orientation toward a moderate lifestyle.

Five Favorable Health Practices

NSPHPC revealed that the majority of American adults 20-64 years of age are engaging in positive health practices. This article focuses on the five health practices identified as favorable by HPL in 1965 and found to be associated with good physical health among survivors 9½ years later. These health practices will be examined by level of education in order to provide information for determining appropriate target groups for health promotion efforts. Since education is highly correlated with occupation and income, education also provides a useful proxy indicator of socioeconomic status.

Table C shows the age-adjusted proportion of men and women who reported each of the five health practices by the level of education. The data indicate that "good" health practices are related to years of education. Furthermore, other data have shown that, in contrast to those with more education, people who have never graduated from high school rate their general emotional and physical well being lower and practice fewer preventive measures for maintaining their health (National Center for Health Statistics, 1981).

HPL found that respondents who reported sleeping 7-8 hours a night were in better physical health and had somewhat lower mortality rates than adults who slept less than 7 or more than 8 hours a night. The data in table C indicate that educational attainment is related to the usual number of hours spent sleeping. Approximately 6 out of 10 men and women with less than 12 years of education reported sleeping 7-8 hours a night, compared with about 7 out of 10 men and women with 1 year or more of college.

Table C. Persons 20–64 years of age reporting favorable health practices, according to sex and educational attainment: United States, 1979

Health practice and educational attainment	Sex	
	Male	Female
	Percent[1] of persons	
7–8 hours sleep		
All education levels	67.3	68.5
Less than 12 years	60.1	60.2
12 years	67.8	67.8
More than 12 years	70.1	73.2
Favorable weight for height		
All education levels	63.7	61.7
Less than 12 years	57.9	50.6
12 years	64.1	57.6
More than 12 years	66.5	72.6
Never smoked cigarettes		
All education levels	33.9	50.7
Less than 12 years	14.4	42.0
12 years	32.6	52.8
More than 12 years	40.1	51.5
Limited alcohol consumption[2]		
All education levels	85.1	96.6
Less than 12 years	74.3	92.9
12 years	85.1	96.4
More than 12 years	89.8	97.9
Physically active		
All education levels	92.6	91.4
Less than 12 years	88.1	85.7
12 years	93.0	92.8
More than 12 years	94.9	94.6

[1] Age adjusted by the direct method to the 1979 National Health Interview Survey sample of respondents residing in households with telephones.
[2] Fewer than 5 drinks on days when alcohol is consumed.

SOURCE: Division of Environmental Epidemiology, National Center for Health Statistics: Data from Wave I of the National Survey of Personal Health Practices and Consequences, 1979.

The measure of favorable weight is based on the 1960 Metropolitan Life Insurance Company Table of Desirable Weights, which was developed from the mortality experience of life insurance plan enrollees over a 20-year period (Metropolitan Life Insurance Company, 1960). According to the HPL definition, favorable weight was between 5 percent under and 20 percent over desirable weight for males and not more than 10 percent over desirable weight for females. For women, maintaining weight within this favorable range was the health practice most strongly related to level of education. About 51 percent of women with less than a high school education reported favorable weight, compared with about 73 percent of women with 1 year or more of college. The relationship between favorable weight and level of education among men is not as striking. About 58 percent of men with less than 12 years of education reported a favorable weight for their height, compared with about 67 percent of men with 1 year or more of college.

HPL identified "never having smoked cigarettes" as a favorable health practice. For men, never having smoked cigarettes is the health practice most strongly related to level of education. Men with the most education reported never having smoked cigarettes about two and one-half times as often as men with the least education (40 percent and 14 percent, respectively). For women, the relationship between cigarette smoking and education is not as strong, although, in each education category, a greater proportion of women than men reported never having smoked cigarettes. About 42 percent of women with the least education reported never having smoked cigarettes, compared with about 52 percent of women in the other two education groups. Educational differences have been shown to be strongest among men and women under 35 years of age and to decrease with advancing age (Wilson and Elinson, 1981).

For purposes of developing health promotion strategies, it is more useful to examine current smoking practices because they can be changed and past smoking behavior cannot. Current cigarette smoking is even more strongly related to level of education, since the more highly educated are more likely to quit smoking. As a result, the age-adjusted proportions of current nonsmokers range from 37 percent of males and 56 percent of females with less than 12 years of education to 69 percent of males and 70 percent of females with more than 12 years of education (National Center for Health Statistics, 1979).

Favorable drinking practices were defined, in accordance with the Alameda County findings, as limiting alcohol consumption to fewer than five drinks on days when alcohol was consumed. Complete abstinence from alcohol was included in this category. A positive relationship exists between favorable drinking practices and level of education for men but not for women. About 74 percent of men with less than a high school education reported favorable drinking practices, compared with about 90 percent of men with 1 year or more of college. Consumption of five or more drinks is not common among women regardless of educational attainment; about 97 percent of women reported favorable drinking practices.

Level of physical activity is the final health practice shown in table C. A physically active person was defined as one who sometimes or often goes swimming in the summer, takes long walks, jogs, or rides a bicycle, or who engages in a physically active hobby, does calisthenics, or participates in other active sports. There is a positive association between this type of physical activity and level of education. Among people with the least education, about 86 percent of women and about 88 percent of men are physically active. Among both men and women with the most education, about 95 percent are physically active.

This measure of physical activity is limited in two respects. First, it defines as physically active those persons who engage in activities requiring only minimal energy output. Hence, the proportion of the population so defined is high. The second limitation is that this measure is related only to leisure activity, not job-related physical activity. Thus, the educational difference in table C does not take job-related physical exercise into account. Other results from NSPHPC show that adults with fewer years of education are more likely to hold jobs requiring hard physical labor. As a result, overall activity levels (physically active in leisure or on the job) do not vary with years of education.

Health Practice Score

Table D shows both sex and educational differences in the number of favorable health practices reported. A higher proportion of women than men, at every level of education, reported four and five favorable health practices. Educational differences are most prominent among persons reporting fewer than four favorable health practices. Among persons with less than 12 years of education, about 7 out of 10 men and 6 out of 10 women reported three or fewer favorable health practices; among persons with more than 12 years of education, about 4 out of 10 men and 3 out of 10 women reported similar numbers.

At the other end of the scale, the proportion of persons reporting five favorable health practices increases steadily by level of education. About 2 percent of men and 10 percent of women in the lowest education group reported five favorable practices while about nine times as many men and about three times as many women in the highest education group reported all five.

Preliminary findings from NSPHPC regarding physical health status (a composite variable developed to approximate a similar variable in the Alameda study) and health practices have been presented by Wilson and Elinson (1981). They found that, as in the Alameda study, the more favorable health habits people practiced, the less likely they were to report concurrent physical health problems. Three favorable health practices identified by Alameda were correlated positively with reported concurrent physical health status: physical activity, weight status, and number of hours of sleep. Never having smoked and

Table D. Health practice scores for persons 20-64 years of age, according to sex and educational attainment: United States, 1979

Health practice score and educational attainment	Sex	
	Male	Female
	Percent[1] of persons	
0-3 practices		
All education levels	51.8	39.5
Less than 12 years	71.4	58.0
12 years	51.3	38.7
More than 12 years	43.5	30.5
4 practices		
All education levels	34.9	41.7
Less than 12 years	26.5	31.9
12 years	37.5	44.7
More than 12 years	38.1	44.5
5 practices		
All education levels	13.3	18.8
Less than 12 years	2.1	10.1
12 years	11.3	16.6
More than 12 years	18.4	25.0

[1] Age adjusted by the direct method to the 1979 National Health Interview Survey sample of respondents residing in households with telephones.

SOURCE: Division of Environmental Epidemiology, National Center for Health Statistics: Data from Wave I of the National Survey of Personal Health Practices and Consequences, 1979.

moderate alcohol drinking or abstinence were found to be relatively uncorrelated with this measure of physical health status.

Other Health Habits and Practices

Data in table E indicate a positive relationship between other favorable health practices and attitudes and educational attainment. It is hypothesized that such health practices and attitudes reflect a general lifestyle conducive to health and well being. Future analyses will examine the association between these variables and positive health status.

Among people with any natural teeth, one-half of the men and about three-quarters of the women brush their teeth at least twice a day. Men and women in the highest education group were much more likely to report brushing their teeth at least twice a day than were those who did not graduate from high school.

Use of dental floss or a waterpick is not common among men or women. Only about 22 percent of men and about 36 percent of women use dental floss or a waterpick three or more times a week. Men and women in the highest education group are about twice as likely to floss or use a waterpick than those in the lowest education group.

About 20 percent of men and women reported always or nearly always using seatbelts when riding in a car. Compared with those who did not graduate from high school, about twice as many men and three times as many women with at least 1 year of college reported using seatbelts always or nearly always.

Table E. Persons 20-64 years of age reporting favorable health practices and attitudes, according to sex and educational attainment: United States, 1979

Health practice or attitude and educational attainment	Sex	
	Male	Female
	Percent[2] of persons	
Brushes teeth 2 or more times a day[1]		
All education levels	50.5	73.7
Less than 12 years	35.8	58.7
12 years	47.2	73.7
More than 12 years	59.3	81.6
Flosses teeth 3 or more times a week[1]		
All education levels	22.0	36.4
Less than 12 years	14.2	23.1
12 years	16.5	36.1
More than 12 years	30.5	43.8
Always or nearly always uses seat belt		
All education levels	19.9	19.5
Less than 12 years	13.2	9.2
12 years	15.6	16.1
More than 12 years	25.7	28.2
Feels a great deal of control over health		
All education levels	51.8	50.2
Less than 12 years	40.0	38.5
12 years	47.9	50.2
More than 12 years	57.8	55.9
Doing a good or an excellent job of taking care of health		
All education levels	65.1	68.3
Less than 12 years	56.5	53.3
12 years	62.1	67.2
More than 12 years	71.1	77.3

[1] Excludes edentulous persons.
[2] Age adjusted by the direct method to the 1979 National Health Interview Survey sample of respondents residing in households with telephones.

SOURCE: National Center for Health Statistics: Data from Wave I of the National Survey of Personal Health Practices and Consequences, 1979.

Strong educational differences but no sex differences exist in attitudes toward health and personal health care. About 4 out of 10 adults with less than a high school education feel that they have a great deal of control over their health, while almost 6 out of 10 adults who have attended college hold this belief. Similarly, a higher proportion of college-educated people feel that they are doing a good or an excellent job of taking care of their health.

Conclusion

Available evidence indicates an association between personal health practices and subsequent morbidity and mortality. Longitudinal data from Alameda County, California, indicate that people who engage in healthful practices live longer and are healthier than people who do not.

Of course, health practices vary in importance. There is clear epidemiologic evidence that some unfavorable health practices such as smoking (Office of Smoking and Health, 1979) and excessive alcohol consumption (Sundby, 1967; National Institute on Alcohol Abuse and Alcoholism, 1978) are strong risk factors for illness, disability, and death. Other practices such as irregular eating or flossing habits pose less risk and may be related to health status and longevity only in that they reflect an orientation toward an unhealthful lifestyle.

Preliminary analyses of data from the National Survey of Personal Health Practices and Consequences reported elsewhere (Wilson and Elinson, 1981) suggest that the relationship between health practices and health status found in Alameda County holds up nationally with cross-sectional data. Longitudinal analyses are planned for this study, including mortality followup using the National Death Index developed by the National Center for Health Statistics.

Mortality has been shown to be inversely related to socioeconomic status in the United States (Kitagawa and Hauser, 1973). Possible explanations for this phenomenon include differential access to medical care, exposure to socioenvironmental hazards, and availability of adequate nutrition among various subgroups in the population. Data presented here suggest that health practices among lower socioeconomic groups may also contribute to their higher mortality risk. Education, as a proxy measure of socioeconomic status, has been shown to be associated with health practices, and health practices have been shown to be associated with mortality.

If the results from the Alameda study are found to apply to the Nation as a whole, the data presented here suggest that adults with less than a high school education would be an appropriate target group for national health promotion efforts. Much work remains to be done to clarify the nature of the relationship between personal health practices and consequences and to identify additional target groups. Evidence at hand points to the importance of this line of research. Health promotion and disease prevention, attainable in part through changes in personal health behavior, provide excellent opportunities for advancing public health.

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Changes in Use of Preventive Health Services

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Overview

Preventive measures have been successful in virtually eliminating several life-threatening and disabling conditions from the United States, primarily through immunizations and improved sanitary conditions. Although immunizations against specific conditions continue to be important, the concept of prevention has broadened to include the major health problems of today, such as heart disease and cancer. The economic costs of neglecting to pursue prevention strategies are high. These costs include large expenditures for medical care to treat preventable illness as well as earnings lost because of illness, disability, or premature death (National Center for Health Statistics, 1980a).

The Federal Government has shown increased interest in promoting preventive measures to reduce the impact of disease. *Healthy People,* a report published by the Office of the Assistant Secretary for Health and the Surgeon General (1979), reviews methods of preventing the most common diseases for specific age groups and identifies 15 priority areas, including the following five preventive health services: family planning, pregnancy and infant care, immunizations, care for sexually transmitted diseases, and high blood pressure control. A second report lists prevention goals for 1990 that are specific and quantifiable objectives for each of the 15 priority areas (Office of the Assistant Secretary for Health and the Surgeon General, 1980). These recent reports build on earlier attempts to identify specific preventive measures appropriate for population subgroups. Instead of recommending an annual physical examination for everyone, specific professional services have been recommended for different age groups (Breslow and Somers, 1977).

This article examines changes in the use of specific preventive services between 1973 and 1979 and measures the extent to which different segments of the population have increased their use of preventive services. Specific health services chosen for analysis are Pap tests, breast examinations, and blood pressure tests. These procedures are generally accepted as being effective in early diagnosis of conditions for which treatment at an early stage can be beneficial.

The data come from two surveys of the National Center for Health Statistics: the National Health Interview Survey (NHIS) and the National Survey of Personal Health Practices and Consequences (NSPHPC). NHIS is a continuing annual sample survey that includes about 111,000 persons in 41,000 households. NSPHPC is a telephone survey of 3,025 adults 20-64 years of age (National Center for Health Statistics, 1981). The 1973 NHIS contained a series of questions on the use of medical services associated with preventive care (National Center for Health Statistics, 1977). These included the time since a woman's last Pap test and breast examination. The 1974 NHIS collected data related to hypertension, including the interval since last blood pressure test, from a one-third subsample of persons 17 years of age and over (National Center for Health Statistics, 1978). Comparable data are available for 1979 from NSPHPC. Possible responses to questions regarding the length of time since receiving the last medical service differed from survey to survey. The most comparable information available is whether or not an examination or test occurred within the past year; therefore, these data were chosen for analysis.

Groupings chosen by age (20-44 years and 45-64 years) and income (low and high) are broad because of the relatively small sample size in the 1979 NSPHPC. The low-income group is defined as members of families within the lowest 20 percent of family incomes ($6,000 for 1973-74 and $10,000 for 1979). Another possible classification is the official poverty level, which combines family size and income. This was not used because the official poverty definition could not be applied to the 1979 survey. The low-income category used in this analysis includes persons who would not be considered poor by the official definition. Thus, differences reported here in use of services according to income tend to be smaller than if the official poverty definition was used.

Survey Findings

Screening for Cervical Cancer

Although mortality from cervical cancer has been declining, this disease caused the deaths of 5,099 American women in 1978. Large racial differences in mortality rates persist—cervical cancer mortality for black women is about three times higher than that for white women.

Screening with a Pap test identifies women at high risk of developing cervical cancer, and prescribing therapy for those with positive tests reduces mortality from cervical cancer (Guzick, 1978). Some controversy exists regarding the most appropriate frequency of Pap tests for low-risk women. However, the medical consensus is that almost all deaths from cervical cancer are preventable if the disease is detected early, and the Pap test is an effective method of early detection (National Institutes of Health, 1980). The American Cancer Society, which previously had recommended an annual Pap test, recently changed its recommendation to a test at least every 3 years after two negative annual Pap tests. A consensus panel conducted at the National Institutes of Health reached a compromise on this issue and recommended rescreening "at regular intervals of 1 to 3 years" (National Institutes of Health, 1980). The percent of women with a Pap test during the previous year increased between 1973 and 1979 (table A). The increases vary according to race and age, but not income. The percent with a recent Pap test increased more for black women than for white women, and more for middle-aged women (45-64 years of age) than for younger women (20-44 years of age). Changes between 1973 and 1979 range from an average[1] of 2 percentage points for young white women to 22 percentage points for middle-aged black women. As a result of these changes, in 1979, the percent of black women receiving a Pap test within the past year exceeded that for white women by about 12 percentage points.

The percent of women 45-64 years of age with a Pap test increased an average of 9 percentage points more than that of women 20-44 years of age. Despite this increase, middle-aged women were still less likely in 1979 to be screened for cervical cancer than younger women.

The income differential has not changed much over time. In both 1973 and 1979, low-income women 20-44 years of age were an average of 7 percentage points less likely than their high-income counterparts to have had a Pap test. The income differential for middle-aged women averaged 15 percentage points in both 1973 and 1979.

Screening for Breast Cancer

Breast cancer is the leading cause of cancer deaths among women and, unlike cervical cancer, has not been declining over the past decade. Death rates for breast cancer are about the same for white and black women. In the past, however, the disease has been more likely to be diagnosed at an earlier stage among white women than among black women. For 1970-73, 48 percent of breast cancer cases among white women were classified as localized, compared with 33 percent of cases among black women. The proportion of black patients diagnosed with advanced disease was almost twice that for white patients

Table A. Women with a Pap test during the past year, according to race, age, and family income: United States, 1973 and 1979

Age and family income	Total[1]		Race			
			White		Black	
	1973	1979	1973	1979	1973	1979
	Percent of women					
20-64 years						
All incomes[2]	54.2	59.6	54.4	58.5	52.7	70.6
Low income	44.4	55.4	43.6	51.9	47.1	66.9
High income	57.2	62.5	57.2	61.9	58.5	71.5
20-44 years						
All incomes	62.5	64.3	62.8	63.3	61.4	74.8
Low income	56.7	64.8	56.6	63.9	57.5	69.3
High income	64.2	65.5	64.3	64.7	65.2	75.4
45-64 years						
All incomes	40.9	51.0	41.5	50.0	35.5	60.6
Low income	29.8	42.9	29.7	38.3	30.1	62.1
High income	44.8	56.0	44.9	56.0	41.7	*59.5

[1] Includes all other races not shown separately.
[2] Includes persons for whom income was not reported.

NOTE: Definitions of low and high income groupings are based on family income for each year as follows:

Year	*Low income*	*High income*
1973	Less than $ 6,000	$ 6,000 or more
1979	Less than $10,000	$10,000 or more

SOURCES: National Center for Health Statistics: Data from the 1973 National Health Interview Survey and from the 1979 National Survey of Personal Health Practices and Consequences.

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[1] The term "average" in this section refers to a weighted average that cannot be directly computed from the tables. The weighted averages are based on a statistical technique that takes into account the variances of the percentages.

(National Cancer Institute, 1976). Breast examination by a physician is an effective screening method that reduces the risk of death from breast cancer through early diagnosis (Greenwald and Nasca, 1978).

Changes in the proportion of women with a breast examination during the past year follow a pattern similar to that observed for Pap tests (table B). This is expected because both procedures are likely to occur at a routine gynecological examination. A greater proportion of women received breast examinations in 1979 than in 1973. The percent with a breast examination within the past year increased more for black women than white women and more for middle-aged (45-64 years of age) than younger women (20-44 years of age). The increases range from an average of 3 percentage points for young white women to 24 percentage points for middle-aged black women. As a result of these changes, in 1979, the percent of black women with a recent examination was about 10 percentage points greater than that for white women. This could reduce the black-white differential in localized breast cancer noted for 1970-73. As was the case with Pap tests, the income differential did not decrease between 1973 and 1979; thus, low-income women were still less likely to receive breast examinations than high-income women.

Screening for Hypertension

Hypertension or high blood pressure is a major risk factor for heart disease and stroke and affects about 1 out of 5 adult Americans. The prevalence of hypertension varies according to race, age, and income. Black people, older people, and people with low income are all more likely to develop hypertension than others (National Center for Health Statistics, 1978). Death rates for cardiovascular disease are about two times higher for black women than white women and are approximately 30 percent higher for black men than white men. The race differentials vary according to age, with greater variation occurring at younger ages than at older ages. Cardiovascular death rates also vary according to sex. The male to female ratio is about 2 among white people and about 1.6 among black people (National Center for Health Statistics, 1980b).

Clinical trials have shown that medical treatment to control elevated blood pressure can reduce mortality for individuals with both mild and severe hypertension (Hypertension Detection and Followup Program Cooperative Group, 1979). Furthermore, favorable changes have occurred in treatment, awareness, and control of hypertension for people 35-74 years of age (National Center for Health Statistics, 1980b). A central component of better awareness and control is periodic blood pressure testing.

The proportion of persons screened for hypertension increased substantially between 1974 and 1979 (table C), although the magnitude of the changes over time varied according to age, sex, race, and income. Among men 20-44 years of age, both races and income groups increased their blood pressure tests by an average of 13 percentage points.

Among women 20-44 years of age, the increase in blood pressure tests varied according to race and income. Blood

Table B. Women with a breast examination during the past year, according to race, age, and family income: United States, 1973 and 1979

Age and family income	Race					
	Total[1]		White		Black	
	1973	1979	1973	1979	1973	1979
	Percent of women					
20-64 years						
All incomes[2]	55.6	62.8	55.7	61.8	54.3	71.4
Low income	45.5	57.5	44.8	53.5	47.9	69.0
High income	58.7	66.4	58.6	66.0	60.6	70.9
20-44 years						
All incomes	62.5	65.4	62.8	64.4	61.8	73.2
Low income	56.1	62.6	56.0	58.7	56.9	71.1
High income	64.4	67.9	64.3	67.5	66.3	71.9
45-64 years						
All incomes	44.5	58.2	45.0	57.2	39.6	67.0
Low income	32.9	50.9	32.8	47.6	33.4	65.0
High income	48.5	63.3	48.7	63.2	46.5	*67.6

[1] Includes all other races not shown separately.

[2] Includes persons for whom income was not reported.

NOTE: Definitions of low and high income groupings are based on family income for each year as follows:

Year	*Low income*	*High income*
1973	Less than \$ 6,000	\$ 6,000 or more
1979	Less than \$10,000	\$10,000 or more

SOURCES: National Center for Health Statistics: Data from the 1973 National Health Interview Survey and from the 1979 National Survey of Personal Health Practices and Consequences.

Table C. Persons with a blood presure test during the past year, according to race, age, sex, and family income: United States, 1974 and 1979

Age, sex, and family income	Total[1]		White		Black	
	1974	1979	1974	1979	1974	1979
	Percent of population					
20-64 YEARS						
Male						
All incomes[2]	61.8	75.2	61.5	74.9	66.1	79.3
Low income	58.8	69.3	58.3	67.6	61.2	82.7
High income	62.5	76.2	62.2	76.0	68.1	78.3
Female						
All incomes[2]	75.5	83.5	75.0	82.0	80.1	96.1
Low income	74.9	86.4	74.3	83.5	77.2	96.0
High income	76.0	83.6	75.5	83.1	82.8	95.3
20-44 YEARS						
Male						
All incomes[2]	59.4	72.8	58.9	72.6	66.1	75.8
Low income	56.5	64.0	55.8	62.4	59.5	*74.3
High income	59.8	74.2	59.3	74.1	68.0	*78.6
Female						
All incomes[2]	75.9	82.4	75.2	80.7	80.9	95.2
Low income	73.5	88.0	72.4	85.5	76.8	95.6
High income	76.8	81.8	76.1	81.0	83.9	93.7
45-64 YEARS						
Male						
All incomes[2]	65.7	80.0	65.6	79.6	66.2	87.0
Low income	62.7	81.6	62.7	81.2	63.4	*100.0
High income	67.0	80.1	66.7	79.5	68.4	*77.8
Female						
All incomes[2]	74.9	85.5	74.6	84.3	78.4	98.1
Low income	76.6	84.5	76.4	81.3	77.9	96.6
High income	74.6	87.5	74.3	87.4	79.9	$100.0

[1] Includes all other races not shown separately.
[2] Includes persons for whom income was not reported.

NOTE: Definitions of low and high income groupings are based on family income for each year as follows:

Year	*Low income*	*High income*
1974	Less than $ 6,000	$ 6,000 or more
1979	Less than $10,000	$10,000 or more

SOURCES: National Center for Health Statistics: Data from the 1974 National Health Interview Survey and from the 1979 National Survey of Personal Health Practices and Consequences.

pressure tests increased more among black women than white women in this age group and more among low-income women than high-income women. The increases range from about 5 percentage points for high-income white women to 18 percentage points for low-income black women. This trend toward greater increases among higher risk subgroups is encouraging.

The largest changes in blood pressure screening occurred among men 45-64 years of age. The percent tested increased an average of 26 percentage points among low-income men, compared with an average increase of 13 percentage points among high-income men. As a result, the low income were less likely than the high income to be screened in 1974, but low-income men were slightly more likely to be screened in 1979. However, there are no significant racial differences in the proportion of middle-aged men tested for hypertension either in 1974 or 1979.

Finally, blood pressure testing has increased more among black women 45-64 years of age than among white women in this age group. In contrast to the younger women, the increase has been greater among high-income than low-income women. Increases in blood pressure testing among middle-aged women range from about 7 percentage points for low-income white women to about 22 percentage points for high-income black women.

Conclusion

The percent of persons receiving each of the three preventive services within the past year increased from 1973 to 1979. The degree of change differs by economic and demographic variables. In 1973, the high-income group was more likely than the low-income group to receive preventive care; and, in 1974, women were more likely than men to be screened for high blood pressure. In 1979, although the size of differences between groups decreased, the likelihood of receiving preventive care continued to vary according to income and sex.

The increases in the use of preventive services are encouraging, especially in instances where high-risk subgroups show improvements to a greater extent than others. For example, black women showed increases in Pap tests and breast examinations to a greater degree than white women. Similarly, blood pressure tests increased more among black women than white women. Screening for hypertension increased more for low-income than high-income persons among women 20-44 years of age and men 45-64 years of age. The percent of women receiving preventive care increased more for middle-aged women than for younger women. However, middle-aged women were still less likely to receive preventive services. This may result from the fact that all three preventive services are usually performed during routine visits for family planning and obstetric care, which are more likely to occur among women 20-44 years of age.

A number of events occurred during the 1970's that could have contributed to the changes noted. Mounting recognition of the importance of disease prevention has resulted in health education efforts to encourage the use of preventive services. This is particularly true for breast cancer and hypertension, both of which have received substantial publicity. The increases in blood pressure testing may be attributed partially to hypertension programs initiated during the 1970's. The National High Blood Pressure Education Program (NHBPEP) began in 1971 and includes Federal agencies, more than 150 national organizations, and State health departments. The objectives of NHBPEP are to increase public and professional awareness of hypertension and to promote adequate treatment (Ward and Johnson, 1976). The Community Hypertension Evaluation Clinic Program, another major effort to control hypertension, screened more than one million people during 1973-75 (Stamler et al., 1976).

Government programs have played a role in making it possible for the poor and medically underserved to receive preventive care. Medicaid provides medical assistance to welfare recipients and the medically needy. Community Health Centers provide primary care to medically underserved areas. Federally subsidized family planning services include the three preventive measures discussed: Pap tests, breast examinations, and blood pressure tests. The greater increase in hypertension screening among poor women of childbearing age than among poor middle-aged women could result from the inclusion of blood pressure tests with family planning services.

Despite the improvements in prevention that occurred during the 1970's, it is clear that the poor still use preventive services less often than the nonpoor (Davis, Gold, and Makuc, 1981). In addition to the 1979 NSPHPC data presented in this article, other recent data also indicated that the poor are at a disadvantage in using preventive medicine. A 1976 national survey conducted by the Center for Health Administration Studies and National Opinion Research Center found that women in high-income families were 40 percent more likely to have Pap tests and breast examinations than women in low-income families (Aday, Anderson, and Fleming, 1980). It should also be noted that the income differentials shown herein are smaller than would have been observed if the official poverty definition had been used. This point is illustrated by an analysis of the 1973 NHIS, which used the official poverty line and found much larger differences by income in use of Pap tests than shown in table A (Kleinman and Kopstein, 1981).

This analysis of changes in preventive care has been limited to adults 20-64 years of age. However, children also do not use preventive services at an equal rate. Data from the 1979 U.S. Immunization Survey conducted by the Center for Disease Control indicate that racial minorities are less likely to be immunized against childhood disease than the white majority, and children from poverty areas in central cities are less likely to be immunized than suburban children (detailed table 25). A study of the use of preventive care by preschool children in five low-income urban areas found that having a regular source of care was an important access factor in the use of preventive care (Wan and Gray, 1978). Regular users of neighborhood health centers and public health clinics were as likely to be immunized and to have a physical checkup as those who received their care from private physicians.

In summary, the data presented in this article indicate substantial increases in the use of three preventive services: Pap tests, breast examinations, and blood pressure tests. Some of the largest changes occurred for high-risk subgroups. Especially notable is the increase in blood pressure testing among low-income, middle-aged men. However, despite these encouraging trends, low-income people are still less likely to use preventive services than those with higher income.

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Long-Term Care for the Elderly in Five States

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Introduction

The age group 65 years and over has been growing faster than any other in America. In addition, the greatest rate of increase has been among the population 85 years of age and over. These trends are likely to continue for many decades affecting all aspects of American society. The effects on the health care system will be particularly striking.

Expenditures for health care made by the elderly are already disproportionate to their number. In 1978, the population 65 years of age and over made up 11 percent of the total population but spent 29 percent of all health care dollars (Health Care Financing Administration, 1980a). As mortality resulting from debilitating chronic conditions declines, the number of "frail" elderly will increase, placing special demands on the health care system. Moreover, one particular sector of the health care system—long-term care—will be most affected by the "aging" of the population because it provides services primarily to the elderly. In 1978, $15.8 billion was spent on nursing home care, just one component of long-term care. This constituted 9.4 percent of all personal health care expenditures and 25.6 percent of expenditures among people 65 years of age and over (Health Care Financing Administration, 1980a).

A large proportion of the health care costs of the elderly are borne by public programs. In 1978, Medicare paid for 44 percent of the personal health expenditures of those 65 years of age and over. These expenditures were primarily for hospital care and physician services (Health Care Financing Administration, 1980a). In 1977, Medicare paid for only 2 percent of the average monthly charges associated with nursing home care, whereas Medicaid paid for 48 percent of these charges (detailed table 72). By all projections, the total cost of long-term care will increase. It is important to understand how the ever-growing number of older Americans will affect the health care system in general and the long-term care system in particular.

Viewed in a broad context, the long-term care system is responsible for providing the wide range of care, both medical and personal, that does not require the intensity or level of care provided by short-stay hospitals. Included in the pool of potential recipients of long-term care are those individuals who suffer varying degrees of impairment from chronic conditions as well as those who are recuperating from acute illness. Some of these patients require intensive medical and nursing care, while others require only minimal assistance and supervision. The settings in which care is provided are equally diverse, ranging from medically oriented facilities to home health care.

Determining that an elderly person must be institutionalized depends not only on medical need but also on whether care can be provided by family and friends or by community-based programs. The availability of care at various levels of need is affected by State and Federal legislation and regulations as well as market forces. Many solutions to the problem of providing long-term care are possible given the diversity in level of need, the variety of settings in which care can be provided, and the changing social, economic, and political conditions. Some of this variation is apparent in long-term care practices that have evolved in State systems.

Nursing home care represents an important component of the long-term care system. Any variation in the utilization of nursing homes for the care of the elderly might suggest other ways in which State long-term care systems differ. In 1977, the National Center for Health Statistics (NCHS) conducted a nationwide sample survey of nursing homes. The sample was drawn so that State estimates could be obtained for five States. Although these five States were not selected because they are representative of the range of variation in long-term care practices, differences among these States can be used to analyze geographic variation in nursing home utilization. This type of analysis can be valuable because it highlights areas with unusual characteristics. Such variations may point to factors that can be manipulated to reduce costs or increase quality. By comparing the situation in different States, hypotheses concerning the utilization process can be formed.

An additional advantage of this analytic approach is the ability to incorporate several different types of data sources. Individual studies of health statistics and health care practices are usually limited by design to either the institutionalized or noninstitutionalized population, and the analyses based on these studies are thereby limited in the kinds of questions that can be addressed. This analysis is based on data on the institutionalized as well as noninstitutionalized elderly.

While the analysis of geographical variation is a potentially valuable tool, it must be used with caution. Causes of variation across geographic units are often difficult to determine, especially when many factors may be involved. Moreover, different types and levels of measurement error are associated with the different sources of data, and it is sometimes impossible to determine whether the patterns observed are meaningful or result from undetected bias in the data. Despite the inherent limitations, the study of health care for the elderly is of sufficient importance to warrant that all available sources of data and forms of analysis be utilized to their fullest, even if many of the relationships proposed by these analyses are not verified by future, more detailed analyses.

Several sources and types of data are used in this article. Data on nursing home utilization and characteristics of the institutionalized population are from the NCHS 1977 National Nursing Home Survey mentioned previously. Data on other forms of long-term care are referenced when applicable. These utilization data are augmented by information on State and Federal regulations concerning payment for these services. Finally, data from the National Health Interview Survey, conducted by NCHS, and data from the Survey of Income and Education and the Current Population Survey, conducted by the U.S. Bureau of the Census, describe the characteristics of the noninstitutionalized population 65 years of age and over. Analyzing these various aspects within a single framework broadens understanding of the processes underlying long-term care for the elderly. By comparing these processes across geographic units, differences in these processes are highlighted.

Variation in Nursing Home Utilization

The five States for which estimates are available from the 1977 National Nursing Home Survey are Massachusetts, New York, Illinois, Texas, and California. The survey collected descriptive data on the nursing home facilities, staffs, and costs. At the same time, data were collected on samples of residents at each sampled facility and on samples of persons discharged from those facilities during 1976. Reports based on data from the entire survey and from the five States have been published elsewhere (National Center for Health Statistics, 1979 and 1980b).

As noted above, there is the potential for a great deal of variation in the characteristics of nursing home patients. Keeler, Kane, and Solomon (1981) identify two distinct groups of patients—those convalescing from acute illnesses who stay in the institution for only a short time, and those no longer able to live independently because of mental or physical problems who have long lengths of stay. These two groups were found to have very different characteristics. Variation in the mix of patients served by the different State systems is an important aspect of variation in nursing home utilization. At any given point in time, the resident population of nursing homes is composed primarily of patients with long lengths of stay; analyses of samples drawn from the resident population will reflect the characteristics of this group. However, analyses based on a sample of discharges will give a more representative picture of the range of patients served by the institution. This article focuses on data from the discharge sample for those 65 years of age and over.

Data presented in tables A and B indicate that States vary considerably in nursing home organization and utilization. The nature of the nursing home system in some States can be characterized by these data; but in other States, no clear pattern is discernible.

One of the clearest patterns occurs in California. Nursing home care in California is characterized by a high rate of turnover and short lengths of stay. A large proportion of beds are certified by Medicare and Medicaid for skilled nursing care only (table A). That is, the facilities in which these beds are located have met the criteria for a skilled nursing facility set up by Medicare and Medicaid and are therefore eligible for reimbursement under these programs. Both Medicare and Medicaid reimburse for skilled nursing care, whereas reimbursement for intermediate care is an option only under Medicaid. However, California also has the highest proportion of beds not certified for either skilled nursing or intermediate care (table A). A somewhat smaller proportion of discharged residents are admitted with a primary diagnosis of senility or mental disorder in California, and the proportion of those alive at the time of discharge who were discharged to a private or semiprivate residence is largest in that State (table B).

The situation in Massachusetts is quite different from that in California. The utilization rate is high in Massachusetts, and only a small proportion of beds are certified for skilled nursing care only whereas a large proportion are certified for intermediate care only (table A). The median length of stay is long, and the proportion of discharges with very long stays (at least 1 year) is particularly high (table B). The proportion of discharged residents with a primary diagnosis of mental disorder or senility at admission is higher in Massachusetts than in the other States, and the proportion who are bedfast is lower.

New York is similar to Massachusetts in several respects. Lengths of stay are relatively long, the proportion of residents with a primary diagnosis of mental disorder or senility at admission is high, and the proportion of discharged residents who are bedfast is low (table B). In addition, New York has the smallest proportion of discharged residents who were discharged to a private or semiprivate residence. New York differs from Massachusetts in that New York has low availability of nursing home beds and fewer residents per 1,000 population 65 years of age and over. Although a large proportion of all beds are certified for skilled care (table A), only a small proportion

Table A. Nursing home utilization by persons 65 years of age and over, according to selected measures: Selected States, 1976 and 1977

Selected measure	State				
	California	Illinois	Massachusetts	New York	Texas
	Number per 1,000 population 65 years and over				
Residents[1,2]	50.4	57.0	59.1	42.5	63.4
Discharges[1,2]	60.3	39.1	44.7	31.1	44.1
Beds[2]	65.2	75.4	74.7	50.5	85.6
	Percent of beds				
Certification status:					
Skilled nursing only[3]	54.6	14.1	6.6	41.1	8.4
Skilled nursing and intermediate care[3]	27.7	43.7	36.3	40.4	18.7
Intermediate care only[3]	1.3	30.9	48.2	7.8	68.4
Not certified[3]	16.4	11.2	9.0	10.7	4.6

[1] Data from the 1976 National Master Facility Inventory adjusted to the age distribution found in each State in the 1977 National Nursing Home Survey.

[2] Data for 1976

[3] Data for 1977.

SOURCES: Division of Health Care Statistics, National Center for Health Statistics: Data from the 1976 National Master Facility Inventory and the 1977 National Nursing Home Survey.

Table B. Nursing home discharges, according to selected characteristics: Selected States, 1976

Characteristic	State				
	California	Illinois	Massachusetts	New York	Texas
	Percent of discharges				
Age					
64-74 years	21.4	19.9	17.3	15.7	24.6
75-84 years	44.4	43.4	45.7	46.5	42.4
85 years and over	34.2	36.8	37.0	37.7	33.0
Other[1]					
Mental disorder or senility[2]	11.5	12.9	15.2	14.2	10.0
Bedfast	17.2	19.2	9.8	11.3	23.7
Continence difficulties	46.9	55.3	30.6	34.6	49.6
Intensive care prior to discharge	55.5	53.1	54.2	42.8	53.6
Discharged to private or semiprivate residence[3]	45.0	29.0	31.2	20.1	31.8
Length of stay longer than 1 year	14.9	18.8	29.2	25.9	23.6
	Number of days				
Median length of stay	40	63	84	115	95

[1] Age adjusted by the direct method to the 1970 population, using 3 age groups.

[2] Primary diagnosis at admission.

[3] Percent of live discharges.

NOTE: Cases with extreme weights have been deleted from the analysis.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Nursing Home Survey.

of discharged residents receive intensive nursing care prior to discharge (table B).

Although some dimensions of nursing home utilization and care differ between New York and Massachusetts, the systems in both States are very different from the one in California. California nursing homes provide care to patients requiring long lengths of stay, but it appears that a larger proportion of the nursing home population in California receives short-term convalescent care than is the case in New York and Massachusetts. In these States, a larger proportion of the nursing home population seems to require long-term care resulting from an inability to live independently.

The patterns in Texas and Illinois are not as clear. Availability and utilization are high in Texas, and most beds are certified for intermediate care only (table A). Although discharged residents are younger in Texas than in other States (a larger proportion are 65-74 years of age), lengths of stay are long and the proportion who are bedfast is large (table B). Illinois is about average on most characteristics except that a large proportion of discharged residents are bedfast.

Alternative Forms of Long-Term Care

Nursing home facilities are not the only option for providing long-term care. Chronic disease hospitals, mental institutions, and even short-term hospitals on the one hand and home health care and community-based day care on the other hand can be used to provide long-term care. The characteristics of a State's nursing home system should be evaluated in conjunction with the utilization of these other facilities. In fact, if States vary in the extent to which nursing home care is utilized and in the type of patient served, they may also vary in the use of alternative forms of long-term care.

Utilization of State and county mental hospitals is higher in New York than elsewhere. At the end of the 1977 reporting year, the inpatient utilization rate for these institutions by people 65 years of age and over was 6.4 per 1,000 population 65 years of age and over, compared with a rate of 0.2 for California and 1.9 for the Nation as a whole (National Institute of Mental Health, 1980). Perhaps some of the elderly in State and county mental hospitals in New York would be found in nursing homes in other States. Thus, while New York's nursing home utilization rate may be low, the addition of those in State and county mental hospitals brings the total rate of institutionalization for the elderly nearer to the national average.

In some cases, care in short-stay hospitals is substituted for nursing home use. This seems to be the case in Massachusetts and New York. Medicare data from 1977 indicate that the average length of stay in short-stay hospitals was 14.5 days in New York and 12.5 days in Massachusetts, compared with 9.0 days in California (Health Care Financing Administration, 1980b). This variation in length of stay is apparent for particular diagnoses as well as for utilization in general. In 1976, the average length of stay for cerebral thrombosis in short-stay hospitals was 12.0 days in the West Region, and 18.6 days in the Northeast Region (Health Care Financing Administration, 1981). These findings suggest that nursing homes are more likely to be used for short-term recuperation in California than in the other States, whereas short-stay hospitals are more likely to be used for this purpose in Massachusetts and New York.

The utilization of chronic disease hospitals is also more prevalent in Massachusetts than elsewhere. No such hospitals exist in California or Texas, but they accounted for almost 7 beds per 1,000 population 65 years of age and over in Massachusetts in 1976 (National Center for Health Statistics, 1980a). The utilization of chronic disease hospitals and long lengths of stay in short-stay hospitals indicate a higher utilization of institutionalized long-term care in Massachusetts than is indicated by the use of nursing homes alone.

Information is more difficult to obtain for congregate living facilities, adult day care, and home health care. These types of facilities are just beginning to be developed, and research is needed to determine the cost-effectiveness of these programs and their effects on the quality of life.

Characteristics of the Noninstitutionalized Elderly

Factors that influence how many and what types of people receive nursing home care also affect which people remain in the community. The characteristics of the institutionalized elderly, whether in nursing homes or other facilities, must be viewed in conjunction with those of the noninstitutionalized elderly population. The interrelationships between and among Medicaid reimbursement rules, the characteristics of long-term care facilities and their residents, and the health and social statuses of the noninstitutionalized population are complex. The potential pool of nursing home residents is defined initially by the age, health, and social characteristics of the population. Reimbursement rules affect the characteristics of the nursing homes and of the institutionalized population. This, in turn, affects the health and social characteristics of the noninstitutionalized.

In this section, selected general health and social characteristics of the noninstitutionalized elderly population in each State are presented. Although the National Health Interview Survey is not designed to provide State estimates, a technique has been developed for this purpose. State estimates of disability from the data collected in the 1974-76 surveys are available (National Center for Health Statistics, 1978). State estimates of selected economic and social characteristics are available from the Survey of Income and Education conducted in 1975 (U.S. Bureau of the Census, 1979) and the March 1977 Current Population Survey (U.S. Bureau of the Census, 1978). Only a very limited description of the social and health characteristics of the noninstitutionalized elderly can be derived from these data. Given their limited scope, the data presented should be viewed as suggestive for future research rather than as definitive findings.

As characteristics of nursing homes differ among the five States, so do the health and social characteristics of the noninstitutionalized populations. However, only in the case of California do the characteristics of the long-term care system and of the noninstitutionalized elderly seem to be related. California has the highest proportion of residents with at least 4 years of high school and one of the lowest proportions with income below the poverty level[1] (table C). While the socioeconomic status of elderly residents is generally higher in California than in the other States, the health status of the elderly in California appears to be somewhat poorer (table D). In general, elderly Californians report a large number of bed-disability days and restricted-activity days and more limitation of activity. The low level of nursing home utilization and the generally poorer health status of the noninstitutionalized residents suggest that alternatives to institutionalization are more likely to be used in California than in the other States. Research is needed to determine what alternative forms of

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[1] The poverty index as used in the Survey of Income and Education adjusts income by such factors as family size, sex of family head, number of children under 18 years of age, and farm or nonfarm residence.

Table C. Selected socioeconomic characteristics of noninstitutionalized persons 65 years of age and over: Selected States, 1976 and 1977

Characteristic	State				
	California	Illinois	Massachusetts	New York	Texas
			Percent of persons		
At least 4 years of high school[1]	48.7	31.6	44.1	35.7	38.8
Living alone[2]	30.6	29.7	27.9	30.4	32.2
Income below poverty[2,3]	7.6	10.2	5.9	9.1	22.5
			Median years of school		
Educational attainment[1]	11.6	8.9	10.7	9.2	9.9

[1] Data for 1977.

[2] Data for 1976.

[3] The poverty index as used in the Survey of Income and Education adjusts income by such factors as family size, sex of family head, number of children under 18 years of age, and farm or nonfarm residence.

SOURCES: (U.S. Bureau of the Census, 1978 and 1979.)

Table D. Selected health characteristics of noninstitutionalized persons 65 years of age and over: Selected States, 1974-76

Characteristic	State				
	California	Illinois	Massachusetts	New York	Texas
			Percent of persons		
Limitation of activity	48	41	41	41	48
			Average number		
Bed-disability days	14	12	12	13	16
Restricted-activity days	47	33	31	29	43

SOURCE: (National Center for Health Statistics, 1978.)

care, if any, are used and to evaluate the consequences on the quality of life.

Unlike California, Texas has one of the lowest proportions of persons with at least 4 years of high school and the highest proportion of persons with incomes below the poverty level (table C). However, Texas is similar to California in that health status appears to be poor (table D). It is not clear how these similarities and differences in the health and social characteristics between the noninstitutionalized elderly populations in Texas and California relate to the differences in their systems of long-term care. In general, the social, economic, and health characteristics of residents of Illinois, Massachusetts, and New York are similar. The noninstitutionalized residents of these States report somewhat better health than those of California and Texas.

A potential alternative to institutionalization in California may be a greater reliance on supportive living arrangements. While data on informal support systems and congregate living arrangements are scarce, some data exist on the composition of the households in which the elderly live. Despite reporting more disability and limitation of activity, elderly residents of California are no less likely than those in other States to live alone. The higher social and economic status of the elderly in California may make it possible for them to purchase the care necessary to avoid or postpone institutionalization and to maintain independent households. It may also be the case that while the prevalence of disability may be higher in California the severity may be less than it is among the poor in other States.

Conclusion

This article has described State variation in long-term care utilization and in the characteristics of the noninstitutionalized elderly. Among the most striking differences in use are those between California and Massachusetts. The nursing home system in California is characterized by high turnover rates and short lengths of stay with discharge back into the community. These factors coupled with short lengths of stay in short-stay hospitals suggest that nursing home care is used as an extension of short-stay hospital care for recuperation more in California than in other States. Indications are that limited care facilities are used more prevalently in California than elsewhere. California has the largest proportion of beds not certified for either skilled nursing or intermediate care, and it is likely that the number of beds in domiciliary homes is underestimated. The noninstitutionalized population in California, although no less likely to live alone, report more limitations resulting from poor health. In contrast, utilization in Massachusetts is much higher and lengths of stay longer. Recuperation from physical illness seems to take place in the short-term hospital, and nursing home care is more likely to be associated with disability related to sentility.

Many factors have influenced the development of the long-term care systems in these five States, and those must be taken into account when evaluating the systems. On the most basic level, characteristics and needs of potential long-term care recipients vary by region. Migration patterns, particularly those associated with retirement, can have an important effect on this variation. Migration not only affects the health characteristics of the elderly in an area, but it also affects the availability of the support structure in terms of family and friends on which an individual can rely to delay or avoid institutionalization.

In addition, the appropriateness of the potential responses to the need for long-term care can be affected by diverse factors such as climate, the spatial distribution of the population, or the architectural characteristics of available housing. For a given level of disability, recipients of care may be well-served by a limited-care, community-based facility if the climate in the area is generally moderate, the facility is conveniently located, and housing that suits the physical limitations of the population is available. Extremes in temperature or low population density may make this type of facility inappropriate in some areas.

Variation in nursing home utilization is also affected in a direct way by the States' involvement in the Medicaid program. More than 47 percent of all nursing home care was paid for by Medicaid in 1977 (detailed table 72). States determine eligibility for services and rates for reimbursement within the constraints of the Medicaid guidelines. These determinations are important factors in the development of the nursing home system. Reimbursement rules, in particular, provide incentives for the industry to develop along certain dimensions. The relationships are quite complex, and the results are often unintended by policymakers.

To participate in the Medicaid program, States must offer skilled nursing facility services and home health services to individuals 21 years of age and over. Institutional services in intermediate care facilities is an option for which Federal financial participation is available. However, States may place limitations on the extent and kind of services received. For example, California, New York, and Texas require some form of authorization or some determination of level of care prior to admission to a skilled nursing and/or intermediate care facility.

An individual's eligibility for Medicaid is linked to two federally assisted welfare programs—Aid to Families with Dependent Children and Supplemental Security Income (SSI). All people receiving cash assistance must be covered by Medicaid except for SSI recipients whose coverage can be limited by more restricted State eligibility standards in effect prior to the implementation of the SSI program. States can expand eligibility to cover recipients of State supplements to SSI or to cover the "medically needy." Only Illinois uses a more restrictive criterion to determine SSI eligibility, and only Texas does not extend eligibility to the medically needy. Both Illinois and Massachusetts extend eligibility to recipients of State supplements to SSI (Health Care Financing Administration, 1979).

The long-term care system will continue to be in a state of flux for some time. The shifts in the age structure alone will require constant readjustments in the system. In the future, more attention may be paid to providing a wide range of care and a level of care appropriate to each patient's needs. Because States vary in long-term care structure does not necessarily lead to the judgment that one system is "better" than another. State variation in long-term care systems resulting from variation in needs and in services appropriate to a given area will probably remain. In fact, as States become more adept at producing a system that fits the particular needs of its residents, State variation might increase. This variation represents a valuable tool in the analysis of the determinants of institutionalization and the relative merits of alternative types of care.

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Medical Care Use in Nonmetropolitan Areas

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Introduction

The unique health problems of rural America were noted as early as 1862 in the First Report of the Commissioner of Agriculture to President Abraham Lincoln (Roemer, 1976). Since that time, several programs at the Federal, State, and local levels have been designed to ameliorate these problems. Many early efforts focused on public health measures (e.g., county health departments and improved sanitation). Strategies to increase the supply of health manpower and facilities in rural areas date from the 1920's (Roemer, 1976).

Although the health problems of the inner-city poor have attracted a great deal of attention in recent years, the special problems of rural areas continue to be a source of concern. Recent evidence indicates that physicians, both general practitioners and specialists, are settling outside major cities to a greater extent than previously (Schwartz et al., 1980). However, large geographic differences in supply of manpower currently exist and are likely to remain in the future. These differences are especially important in view of the recent population growth in nonmetropolitan areas and the beginning of a net migration toward nonmetropolitan rather than metropolitan areas (Tucker, 1976; Johnson and Purdy, 1980).

In this article, medical care utilization is compared by race and location of residence. Nonmetropolitan areas are divided into two categories of nearly equal populations: counties with at least one city of 10,000 or more population (semirural areas) and counties with no city of population 10,000 or more (rural areas). Both types of nonmetropolitan areas (which comprise about 30 percent of the total population) are compared with metropolitan areas. Data from the National Health Interview Surveys (NHIS) of 1976-78 are used for the major part of this analysis.

Health Care Indicators

Health Resources

Substantial variation exists in the availability of health resources among the three types of areas. In 1977 (the midpoint of the period covered by NHIS data), the number of patient care physicians per 100,000 population ranged from 170 in metropolitan areas to 99 in semirural areas to 56 in rural areas. The variation in availability of board-certified specialists was even greater (Schwartz et al., 1980). Much less variation existed in hospital beds per 1,000 population—5.0 in metropolitan and semirural areas and 4.1 in rural areas, according to 1976 data.

The characteristics of physician practices also differ between metropolitan and nonmetropolitan areas. Results from two different surveys of physicians conducted in 1975 show that physicians practicing in nonmetropolitan areas worked longer hours and saw considerably more patients per week than those in metropolitan areas (American Medical Association, 1977; Bureau of Health Manpower, 1980). Other differences between metropolitan and nonmetropolitan physicians are complex with no clear-cut implications in terms of access to care (Bureau of Health Manpower, 1980). Another factor that needs to be considered is the number of nonmetropolitan residents who use medical care providers and facilities located in nearby metropolitan areas.

Physician Visits

The initial contact with the medical care system, either in response to illness or for preventive care, is an important indicator of access. Individuals who have not consulted a physician in 2 years are more likely than others to have barriers to the receipt of needed care. Table A shows the proportion of persons with no physician visit in the 2 years preceding interview.

The most striking differences are found among children under 17 years of age. Black children are more likely than white children to have had no visits, and the proportion with no visits in 2 years increases sharply for both races with decreasing urbanization. In rural areas, 21 percent of black children and 14 percent of white children had no visits, compared with only 10 percent and 9 percent, respectively, in metropolitan areas.

The differences in the other age groups are relatively small. However, a tendency exists, especially among white people, for the proportion with no visits to increase with decreasing urbanization.

The average annual number of physician visits per person also differs markedly between metropolitan and

Table A. Persons with no physician visits during past 2 years, according to age, race, and location of residence: United States, 1976-78

Race and location of residence	All ages	Under 17 years	17-44 years	45-64 years	65 years and over
	Percent of population				
Total[1]					
All areas	12.9	10.4	13.1	15.6	13.5
Metropolitan	12.2	9.2	12.7	14.9	13.2
Nonmetropolitan	14.3	12.8	14.0	17.0	14.0
Semirural[2]	13.6	11.3	13.6	16.7	14.1
Rural[3]	15.1	14.7	14.6	17.4	13.9
White					
All areas	12.9	10.0	13.2	15.8	13.5
Metropolitan	12.3	8.9	12.8	15.2	13.1
Nonmetropolitan	14.1	12.1	14.0	17.0	14.1
Semirural[2]	13.5	10.9	13.6	16.6	14.0
Rural[3]	14.9	13.6	14.6	17.6	14.3
Black					
All areas	12.4	12.5	11.5	13.5	13.7
Metropolitan	11.2	10.4	10.8	12.5	14.2
Nonmetropolitan	16.1	18.5	14.3	16.9	12.6
Semirural[2]	15.3	14.9	14.0	18.9	15.9
Rural[3]	16.8	20.9	14.5	15.5	10.4

[1] Includes all other races not shown separately.

[2] Nonmetropolitan counties with at least 1 city of 10,000 population or more.

[3] Nonmetropolitan counties with no city of 10,000 population or more.

SOURCE: National Center for Health Statistics: Data from the 1976-78 National Health Interview Surveys.

nonmetropolitan areas (table B). Once again, the largest differences in terms of both race and residence are among children. In metropolitan areas, there were 3.3 annual visits per black child and 4.5 annual visits per white child, compared with 2.1 and 3.9, respectively, in nonmetropolitan areas. No significant differences existed between rural and semirural areas.

Among those 17-44 years of age, black people had an average[1] of 13 percent more visits per year than white people in each type of area. In addition, the number of visits decreased steadily with decreasing urbanization--residents of semirural areas and residents of rural areas had an average of 6 percent and 15 percent fewer visits, respectively, than residents of metropolitan areas.

In the older age groups, no significant differences exist between the races in the number of visits. Adults 45-64 years of age living in semirural areas and those living in rural areas had an average of 8 percent and 15 percent fewer visits, respectively, than those living in metropolitan areas. Among the elderly, residents of nonmetropolitan areas had an average of 15 percent fewer visits than residents of metropolitan areas, but no significant differences existed between residents of rural and semirural areas.

In addition to the differences in the total number of visits, the type of physician seen differs by race and residence. Table C shows the proportion of visits for which the physician was a general practitioner. In all age groups except 17-44 years, visits made by black people were considerably more likely to be to a general practitioner. Furthermore, the differences in physician supply among the three types of areas are reflected in sharp increases in the proportion of visits to general practitioners as urbanization decreases.

Hospitalization

The patterns for hospital utilization are very different from those for ambulatory care use. The data in table D indicate that the proportion of the white population with a hospital episode in the year preceding interview increases with decreasing urbanization. Compared with residents of metropolitan areas, residents of semirural areas and residents of rural areas were, on the average, 10 percent and 27 percent more likely, respectively, to have had a hospital episode. As a result of the greater length of stay among metropolitan residents, there were no significant differences in hospital days per 1,000 population between residents of metropolitan and semirural areas. However, white residents of rural areas had about 10 percent more hospital days than those of other areas.

Among black people, however, only children showed a significant difference in hospital episodes by location of

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[1] The term "average" in this section refers to a weighted average that cannot be directly computed from the tables. The weighted averages are based on a statistical technique that takes into account the variances of the estimates in the tables.

Table B. Physician visits per person per year, according to age, race, and location of residence: United States, 1976-78

Race and location of residence	Age				
	All ages	Under 17 years	17-44 years	45-64 years	65 years and over
Total[1]	Number of visits				
All areas	4.8	4.1	4.6	5.5	6.6
Metropolitan	5.0	4.3	4.7	5.7	6.9
Nonmetropolitan	4.5	3.7	4.3	5.0	5.9
Semirural[2]	4.6	3.8	4.5	5.2	5.8
Rural[3]	4.3	3.6	4.0	4.9	6.0
White					
All areas	4.9	4.3	4.5	5.4	6.6
Metropolitan	5.1	4.5	4.7	5.6	7.0
Nonmetropolitan	4.5	3.9	4.2	5.1	5.9
Semirural[2]	4.6	4.0	4.4	5.2	5.8
Rural[3]	4.4	3.9	4.0	4.9	5.9
Black					
All areas	4.6	3.0	5.2	5.8	6.6
Metropolitan	4.8	3.3	5.3	6.1	6.6
Nonmetropolitan	3.9	2.1	4.7	4.8	6.7
Semirural[2]	4.2	2.2	5.1	5.3	6.7
Rural[3]	3.7	2.0	4.3	4.5	6.7

[1] Includes all other races not shown separately.
[2] Nonmetropolitan counties with at least 1 city of 10,000 population or more.
[3] Nonmetropolitan counties with no city of 10,000 population or more.

SOURCE: National Center for Health Statistics: Data from the 1976-78 National Health Interview Surveys.

Table C. Visits to general practitioners, according to age, race, and location of residence of patient: United States, 1976-78

Race and location of residence	Age				
	All ages	Under 17 years	17-44 years	45-64 years	65 years and over
Total[1]	Percent of all physician visits				
All areas	49.8	41.6	50.5	52.1	58.1
Metropolitan	45.0	35.7	46.1	47.6	53.3
Nonmetropolitan	61.3	55.3	61.4	63.0	67.7
Semirural[2]	55.0	48.0	56.8	55.3	61.1
Rural[3]	69.4	64.2	68.2	73.0	74.6
White					
All areas	49.3	40.8	50.1	51.5	57.5
Metropolitan	44.1	34.3	45.3	46.6	52.7
Nonmetropolitan	60.8	54.5	61.3	62.5	66.9
Semirural[2]	54.7	47.2	57.2	54.7	60.2
Rural[3]	69.0	63.7	67.5	72.9	74.3
Black					
All areas	54.8	48.7	54.3	58.1	64.0
Metropolitan	51.7	45.1	52.2	55.0	58.6
Nonmetropolitan	67.3	65.3	62.8	71.8	76.5
Semirural[2]	59.5	59.1	51.8	65.7	76.2
Rural[3]	73.7	69.9	73.0	76.9	76.7

[1] Includes all other races not shown separately.
[2] Nonmetropolitan counties with at least 1 city of 10,000 population or more.
[3] Nonmetropolitan counties with no city of 10,000 population or more.

SOURCE: National Center for Health Statistics: Data from the 1976-78 National Health Interview Surveys.

Table D. Persons with a hospital episode during past year, according to age, race, and location of residence: United States, 1976-78

Race and location of residence	All ages	Under 17 years	17-44 years	45-64 years	65 years and over
	Percent of population				
Total[1]					
All areas	13.1	6.2	13.4	16.0	24.9
Metropolitan	12.5	6.0	12.8	15.3	23.6
Nonmetropolitan	14.5	6.7	14.9	17.6	27.1
Semirural[2]	13.7	6.5	14.0	16.8	25.0
Rural[3]	15.5	6.9	16.0	18.6	29.2
White					
All areas	13.2	6.3	13.1	16.0	25.3
Metropolitan	12.4	6.0	12.3	15.2	24.0
Nonmetropolitan	14.8	7.0	14.7	17.8	27.5
Semirural[2]	13.8	6.6	13.8	16.9	25.2
Rural[3]	16.0	7.4	16.0	18.8	30.0
Black					
All areas	13.0	5.8	16.3	16.7	21.1
Metropolitan	13.2	6.4	16.3	17.0	20.6
Nonmetropolitan	12.2	4.2	16.5	15.8	22.3
Semirural[2]	12.9	4.7	17.5	15.2	23.7
Rural[3]	11.7	3.9	15.7	16.3	21.4

[1] Includes all other races not shown separately.
[2] Nonmetropolitan counties with at least 1 city of 10,000 population or more.
[3] Nonmetropolitan counties with no city of 10,000 population or more.

SOURCE: National Center for Health Statistics: Data from the 1976-78 National Health Interview Surveys.

residence. Furthermore, this difference was in the opposite direction to that observed among white people. There was a large and steady decrease in hospital episodes as urbanization decreased.

Health Status

It is difficult to evaluate these differences in medical care utilization without some indication of the differences in need for care. Historically, rural areas of the United States have had lower mortality rates than urban areas (Roemer, 1976). However, the rural advantage has diminished as infectious diseases have been virtually eliminated. For 1968-72, the age-adjusted death rate for residents 35-74 years of age in nonmetropolitan areas was only about 3 percent less than that for those residents of metropolitan areas (National Center for Health Statistics, 1980a). Furthermore, in terms of causes of death that are more amenable to medical care intervention, nonmetropolitan areas are at a distinct disadvantage. For 1968-72, mortality from cervical cancer was about 20 percent higher, from motor vehicle accidents 70 percent higher, and, among men, from other accidents 30 percent higher in nonmetropolitan areas (National Center for Health Statistics, 1980a). In 1975, maternal mortality was about 25 percent higher, and for 1974-77, infant mortality was about 10 percent higher in nonmetropolitan areas (National Center for Health Statistics, 1980b).

Health indicators for the National Health Interview Survey also suggest greater need for medical care in nonmetropolitan areas. The proportion reporting fair or poor health is greater among black people and generally increases with decreasing urbanization (table E). Black children are more than twice as likely as white children to have fair or poor health. Although no significant differences exist between children living in metropolitan and semirural areas, children in rural areas are an average 35 percent more likely to be in fair or poor health.

The differences among adults 17-44 years of age are sharper than those among children. Residents of semirural areas report fair or poor health an average of 12 percent more often and residents of rural areas an average of 54 percent more often than residents of metropolitan areas.

Among white adults 45-64 years of age, the proportion reporting fair or poor health steadily increases with decreasing urbanization. White residents of semirural areas are about 25 percent more likely and residents of rural areas 60 percent more likely to report fair or poor health than residents of metropolitan areas. Among black people in this age group, the difference between those residing in metropolitan and semirural areas is similar to that for white people; however, the difference between residents of rural and semirural areas is not significant.

Black elderly are about 50 percent more likely than white elderly to report fair or poor health. Both white elderly and black elderly show an average increase in fair or poor health of 9 percent between metropolitan and semirural areas and 36 percent between metropolitan and rural areas.

Table E. Persons reporting fair or poor health status, according to age, race, and location of residence: United States, 1976-78

Race and location of residence	Age				
	All ages	Under 17 years	17-44 years	45-64 years	65 years and over
Total[1]	Percent of population				
All areas	12.3	4.3	8.5	21.9	30.4
Metropolitan	11.3	4.1	7.9	19.8	28.2
Nonmetropolitan	14.6	4.7	9.7	26.4	34.2
Semirural[2]	12.6	4.0	8.2	23.4	30.4
Rural[3]	17.1	5.5	11.8	30.1	38.3
White					
All areas	11.5	3.7	7.4	20.3	29.2
Metropolitan	10.3	3.4	6.8	17.9	26.8
Nonmetropolitan	13.8	4.2	8.8	25.0	32.9
Semirural[2]	12.0	3.7	7.5	22.2	29.6
Rural[3]	16.2	4.8	10.6	28.6	36.6
Black					
All areas	18.6	7.7	15.9	37.6	44.0
Metropolitan	17.5	7.3	14.9	35.4	41.0
Nonmetropolitan	22.3	8.6	19.6	45.2	51.2
Semirural[2]	19.9	7.4	16.9	43.7	43.4
Rural[3]	24.1	9.4	21.7	46.3	56.2

[1] Includes all other races not shown separately.
[2] Nonmetropolitan counties with at least 1 city of 10,000 population or more.
[3] Nonmetropolitan counties with no city of 10,000 population or more.

SOURCE: National Center for Health Statistics: Data from the 1976-78 National Health Interview Surveys.

Among adults 17 years of age and over, the patterns in the proportion reporting limitation of usual activity because of chronic illness are similar to those reporting fair or poor health but not quite as strong. Among children, however, the proportion with limitation of usual activity decreases with decreasing urbanization, although the proportions are very small. There are few differences by location of residence in bed-disability days per person, although this measure is more influenced by medical care (e.g., physician-prescribed bed rest) than the preceding two measures.

Since health status differs by location of residence, it is important to examine utilization rates after controlling for these differences. One method that partially controls for health status is comparing physician visits for only those who report fair or poor health (table F). This subgroup is more homogeneous with respect to health care needs than is the total population. This measure shows sharper differences by race and location of residence than does the number of visits for all persons shown in table B. In particular, the black-white difference is extremely large among children. Black people in the two oldest age groups who report fair or poor health also have fewer visits than their white counterparts. No overall race differences existed among these groups in table B. There are no race differences among adults 17-44 years of age. In each age group except the elderly, the number of visits decreases steadily with decreasing urbanization. Among the elderly, however, the residents of rural and semirural areas reporting fair or poor health have about the same number of visits.

The number of visits for persons with limitation of usual activity because of chronic illness is an alternative measure of utilization that partially controls for health status. It also shows much greater utilization for residents of metropolitan areas than for those of rural areas. However, the number of visits for residents of semirural areas with activity limitation is not significantly different from the number for those of rural areas in the youngest age group. In the next two age groups, on the other hand, no significant difference exists between residents of semirural and metropolitan areas. The oldest age group is the only one that shows a steady decline in number of visits (for those with activity limitation because of chronic illness) as urbanization decreases.

Conclusion

Ambulatory care utilization is considerably lower for residents of nonmetropolitan areas than for those of metropolitan areas. Furthermore, residents of rural areas (i.e., nonmetropolitan counties with no city of population 10,000 or more) generally have lower utilization rates than those of other nonmetropolitan areas. The differences are especially pronounced among children. Residents of nonmetropolitan areas are less likely to have preventive care, more likely to spend more than 30 minutes traveling

Table F. Physician visits per person reporting fair or poor health, according to age, race, and location of residence: United States, 1976-78

Race and location of residence	Age				
	All ages	Under 17 years	17-44 years	45-64 years	65 years and over
Total[1]	Number of visits				
All areas	10.5	10.9	11.0	10.5	9.7
Metropolitan	11.4	11.6	11.9	11.4	10.6
Nonmetropolitan	9.0	9.7	9.4	9.0	8.4
Semirural[2]	9.9	11.2	10.8	10.1	8.5
Rural[3]	8.1	8.4	8.1	7.9	8.3
White					
All areas	10.8	12.6	11.0	10.7	10.0
Metropolitan	11.8	13.4	11.9	11.7	11.1
Nonmetropolitan	9.3	11.4	9.5	9.3	8.5
Semirural[2]	10.2	12.7	10.8	10.4	8.5
Rural[3]	8.4	10.1	8.1	8.1	8.5
Black					
All areas	9.3	6.8	11.2	9.3	7.7
Metropolitan	10.1	8.1	12.1	10.1	7.8
Nonmetropolitan	7.2	3.4	8.9	6.9	7.5
Semirural[2]	8.2	3.4	10.9	7.9	7.7
Rural[3]	6.6	3.5	7.8	6.3	7.4

[1] Includes all other races not shown separately.
[2] Nonmetropolitan counties with at least 1 city of 10,000 population or more.
[3] Nonmetropolitan counties with no city of 10,000 population or more.

SOURCE: National Center for Health Statistics: Data from the 1976-78 National Health Interview Surveys.

to a physician visit, and experience longer waits once there (Davis and Marshall, 1977; Kleinman and Kopstein, 1981; Aday, Anderson, and Fleming, 1980). These differences are of further significance because residents of nonmetropolitan areas appear to be less healthy than those of metropolitan areas.

With respect to hospital utilization, however, the situation is different. White residents of nonmetropolitan areas have higher hospitalization rates than their counter-parts in metropolitan areas. Among black adults, there are no differences in hospital utilization by location of residence. Among black children, however, hospital utilization declines with decreasing urbanization.

It is unclear whether the generally higher hospitalization rates in nonmetropolitan areas result from substitution of inpatient care for ambulatory care or from a lack of ambulatory care that may lead to more serious problems that require hospitalization. In either case, the higher cost of hospital care suggests that strategies to increase the use of ambulatory care in nonmetropolitan areas could have beneficial effects on total health care expenditures.

Although the supply of physicians is much greater in metropolitan than in nonmetropolitan areas, the difference in physician-to-population ratios may overstate the true difference in availability of care. Data from the 1978 NHIS show that 17 percent of physician visits by residents of nonmetropolitan areas occur in metropolitan areas.

Physicians in nonmetropolitan areas see more patients per week than those in metropolitan areas. Associated with this greater workload is the fact that 55 percent of the visits to physicians in nonmetropolitan areas during 1979 lasted 10 minutes or less, compared with 46 percent in metropolitan areas (detailed table 37). Visits to physicians in nonmetropolitan areas were also less likely to be followed by a scheduled return appointment—54 percent versus 62 percent in 1979. These differences are perhaps more important when considered for selected diagnoses that require continuing care and patient involvement. For 1975-76 (the most recent years for which detailed tabulations are available), 78 percent of visits for hypertension in nonmetropolitan areas had a scheduled followup, compared with 89 percent in metropolitan areas. Visits for hypertension in nonmetropolitan areas were also of shorter duration than those in metropolitan areas (55 percent versus 43 percent took 10 minutes or less). The implications of these differences in terms of quality of care warrant further investigation.

Metropolitan and nonmetropolitan areas differ on many dimensions other than supply of health resources. There is a steady increase with decreasing urbanization in the proportion of the population with family income below the poverty level: 14 percent in metropolitan, 17 percent in semirural, and 24 percent in rural areas. In addition, despite the greater incidence of poverty, 1978 NHIS data indicate that 6.1 percent of residents of nonmetropolitan areas have Medicaid coverage, compared with 7.3 percent of those of metropolitan areas. Of those below the poverty level, 26 percent in nonmetropolitan areas have Medicaid, compared with 39 percent in metropolitan areas. Furthermore, rural areas are at a disadvantage in terms of many other social, economic, and demographic factors (Davis and Marshall, 1977).

Regional differences also exist in the nonmetropolitan population. For example, nearly 90 percent of the black nonmetropolitan population resides in the South. The more rural population is also concentrated more heavily in the South. Among white people, 30 percent of the semirural population lives in the South, compared with 52 percent of the rural population. Among black people, the corresponding figures are 77 percent and 97 percent, respectively. It should be noted, however, that analyses of physician visit and hospital episode data for only the South show similar patterns to those in tables B and D.

Although metropolitan areas were used in this article as a basis for comparison, they are far from homogeneous. The central cities of most metropolitan areas contain pockets of poverty and unmet health care needs as great as those in rural areas. If the suburban part of metropolitan areas were used as the basis of comparison, the differences reported here would be even larger.

Several programs at both the Federal and State levels have been designed to increase the supply of health care providers in designated shortage areas, both metropolitan and nonmetropolitan. As of December 31, 1980, the Federal Government designated 1,921 primary care manpower shortage areas, of which 70 percent were nonmetropolitan. However, the population of these areas constituted only 45 percent of the 42 million people living in designated areas.

In terms of affected population, about 15 percent of metropolitan residents and 30 percent of nonmetropolitan residents lived in primary care manpower shortage areas. Since Federal resources for health manpower programs will be decreasing over the next several years, the criteria for shortage area designation are coming under increased scrutiny. Efforts are underway to develop methods of designating shortage areas that provide more precise means of prioritizing areas in terms of severity of shortage and clarifying the differences between metropolitan and nonmetropolitan shortage areas.

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Use of Dental Services

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Introduction

Dental decay is one of the most prevalent diseases in the United States. Periodontal disease, another indicator of poor oral health, becomes more common with increasing age and is more prevalent among black people than among white people. The cumulative effect of untreated dental problems throughout the lifetime is demonstrated by the fact that about half the population 65-74 years of age no longer have any teeth (National Center for Health Statistics, 1979).

In the 1971-74 National Health and Nutrition Examination Survey (NHANES), dental examiners made clinical assessments of the respondents' unmet need for dental treatment. Although treatment needs varied with age, an estimated 64 percent of the population required some type of dental treatment. Analysis of NHANES data by race and income identified greater unmet need for all types of dental treatment among black people than among white people and among those in low-income groups compared with those in high- income groups (Institute of Medicine, 1980). The relationship between income status and unmet need for treatment held for all groups under 65 years of age.

The greater unmet need for dental treatment among black people and the poor is reflected in their patterns of dental utilization (Douglass and Cole, 1979). Although the trend has been toward equality in the utilization of physician services by income, this has not been the case for utilization of dental services (National Center for Health Statistics, 1980).

Part of the reason for the persistence of income differentials in dental care is the lack of insurance coverage, both public and private. Funding for dental services comes from three sources—public programs, private insurance, and out-of-pocket payments. Public expenditures for dental services are mainly through Federal and State Medicaid programs. Medicare does not cover dental treatment. As a percentage of total Medicaid benefit payments, the proportion spent on dental care is small (2.1 percent in 1978) and has been declining during the past decade (Health Care Financing Administration, 1979). Under Federal regulations, dental care must be offered to Medicaid eligible children under 21 years of age as part of the Early and Periodic Screening, Diagnosis, and Treatment Program. However, dental coverage for adults is an optional benefit, and limitations on eligibility and services vary from State to State.

The growth of private dental insurance has been a relatively recent phenomenon. Prior to 1970, less than 5 percent of the population was covered by private plans. However, by 1978, 27 percent of the population had private dental insurance (Institute of Medicine, 1980). Despite this trend, most expenditures for dental care are still out-of-pocket payments made by patients or their families. Gibson and Waldo (1981) report that out-of-pocket payments accounted for 75 percent of expenditures for dental services in 1980, while private insurance accounted for 21 percent and government programs for 4 percent. Therefore, family income serves as a useful indicator of financial barriers to dental care.

This article focuses on differences in the use of dental services by age, income, and residence. Data were obtained from the National Health Interview Survey (NHIS), which is an annual survey comprised of a probability sample of approximately 110,000 persons in 40,000 households. In this analysis, data for 3 years—1976 through 1978—are combined to minimize sampling error.

The variable used to measure utilization is the proportion of respondents who made at least one visit to a dentist during the 2 years preceding interview. Kronenfeld (1979) suggests that gaining access to the system is the key indicator because the mean number of visits for persons who actually visit the dentist in a year does not vary significantly by income and education. Therefore, attention in this analysis is directed to differences in dental contact over a 2-year period.

Comparisons are made between the white and black races; other races were omitted because of small sample size. Family income is classified to approximate the official poverty income level adjusted for family size. For example, the poverty cutoff for a family of two is defined as $4,000 and the cutoff for a family of four is $7,000. Based on 1976-78 NHIS data, an estimated 16 percent of the population had incomes below the poverty level. At the other end of the scale, 52 percent of the population had incomes more than twice the poverty level.

Since the availability of dentists is much lower in nonmetropolitan areas than in metropolitan areas,[1] utilization rates for metropolitan and nonmetropolitan areas are compared.

Differentials by Age Groups

Considerable variation exists among age groups in the percent with at least one dental visit during the 2 years preceding interview (table A). The proportion was lowest for children under 6 years of age (25 percent), and highest for children 6-16 years of age (79 percent). Decreasing utilization with increasing age is evident after this point; only 40 percent of persons 65 years of age and over reported making dental visits.

For every group over 5 years of age, black people showed lower levels of utilization than white people did. The difference in the proportions between the races varied only slightly by age (from 14 to 18 percentage points).

To examine the effect of income and residence on patterns of utilization, age groups will be considered separately. The group under 6 years of age is excluded from further analysis because of the relatively small sample size and low utilization rates.

Children 6-16 Years of Age

The proportion of children who have seen a dentist during the 2 years preceding interview is greater among those above the poverty level than among those below. However, the data in table B indicate that the effect of income differs somewhat by race. Among white children, there was an average[2] difference of about 25 percentage points between the proportions for the lowest and highest income groups, compared with an average difference of 15 percentage points between the corresponding proportions for black children.

Nonmetropolitan residence has a stronger depressing effect on utilization among black children than among white children. The proportions for black children living in nonmetropolitan areas were an average of 14 percentage points lower than for those living in metropolitan areas, whereas the proportions for white children were an average of 4 percentage points lower.

Adults 17-44 Years of Age

The data in table C indicate that among adults 17-44 years of age the influence of income on dental utilization during a 2-year period was somewhat stronger for white people than for black people. Regardless of location of residence, the difference between the highest and lowest income groups averaged about 17 percentage points for white people and 12 percentage points for black people.

The utilization rates were about 5 percentage points lower in nonmetropolitan areas than in metropolitan areas across all race and income groups.

Table A. Persons with at least 1 dental visit during the past 2 years, according to race and age: United States, 1976-78

Age	Race		
	Total[1]	White	Black
	Percent of population		
All ages	63.8	65.6	51.5
Under 6 years	25.0	26.1	18.9
6-16 years	79.0	81.8	64.3
17-44 years	72.3	74.1	60.1
45-64 years	61.4	62.9	46.1
65 years and over	39.9	41.2	26.4

[1] Includes all other races not shown separately.

NOTE: Data from 1976, 1977, and 1978 were combined.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table B. Persons 6-16 years of age with at least 1 dental visit during the past 2 years, according to location of residence, race, and family income level: United States, 1976-78

Race and family income level	Location of residence		
	Total	Metropolitan	Nonmetropolitan
All races	Percent of population		
All incomes[1]	79.0	81.6	74.0
Below poverty	63.6	66.5	59.2
100-150 percent poverty	69.3	70.5	67.6
150-200 percent poverty	78.6	80.7	74.6
Above 200 percent poverty	90.1	90.9	87.8
White			
All incomes[1]	81.8	84.3	77.0
Below poverty	65.3	67.6	62.4
100-150 percent poverty	71.3	72.2	70.1
150-200 percent poverty	79.7	82.0	75.8
Above 200 percent poverty	90.9	92.0	88.3
Black			
All incomes[1]	64.3	68.8	51.3
Below poverty	60.3	64.7	50.0
100-150 percent poverty	60.5	64.8	48.1
150-200 percent poverty	68.7	72.0	56.0
Above 200 percent poverty	78.0	79.0	71.3

[1] Includes respondents who did not report income (9 percent of all interviewees).

NOTES: Data from 1976, 1977, and 1978 were combined. Family income was categorized to approximate the official poverty income level adjusted for family size; for example, poverty was defined at $7,000 for a family of 4 and $4,000 for a family of 2.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

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[1] See "Dental Manpower" in this report.

[2] The term "average" in this section refers to a weighted average that cannot be directly computed from the tables. The weighted averages are based on a statistical technique that takes into account the variances of the percentages.

Table C. Persons 17–44 years of age with at least 1 dental visit during the past 2 years, according to location of residence, race, and family income level: United States, 1976–78

Race and family income level	Location of residence Total	 Metropolitan	 Nonmetropolitan
	Percent of population		
All races			
All incomes[1]	72.3	74.3	67.7
Below poverty	60.2	62.6	56.3
100–150 percent poverty	61.8	62.8	60.2
150–200 percent poverty	67.4	68.9	64.5
Above 200 percent poverty	79.0	80.1	75.9
White			
All incomes[1]	74.1	76.4	69.2
Below poverty	62.2	65.0	58.5
100–150 percent poverty	63.1	64.5	61.2
150–200 percent poverty	68.4	70.3	65.2
Above 200 percent poverty	80.0	81.4	76.1
Black			
All incomes[1]	60.1	62.2	52.6
Below poverty	55.0	57.7	48.0
100–150 percent poverty	55.2	56.3	51.9
150–200 percent poverty	59.6	60.9	54.4
Above 200 percent poverty	67.6	67.7	67.1.

[1] Includes respondents who did not report income (9 percent of all interviewees).

NOTES: Data from 1976, 1977, and 1978 were combined. Family income was categorized to approximate the official poverty income level adjusted for family size; for example, poverty was defined at $7,000 for a family of 4 and $4,000 for a family of 2.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Adults 45-64 Years of Age

For adults 45-64 years of age, the data in table D indicate that, within metropolitan and nonmetropolitan areas, the level of utilization among those below poverty level did not differ by race. However, with every increased increment of income, the difference in utilization rates was greater for white people than for black people. Thus, at the highest income level, the proportion with a dental visit during the past 2 years was about 15 percentage points lower for black people than for white.

The utilization rates were consistently lower for persons residing in nonmetropolitan areas. The percentage-point difference appears to be roughly on the same order of magnitude for white and black people (approximately 7 percentage points) at all income levels.

65 Years of Age and Over

The effect of income varies by race among the elderly population (table E). For white people, there was about a 33 percentage-point difference between the highest and lowest income groups compared with about a 13 percentage-point difference for black people. Thus, the racial differential, which is negligible in the poverty group, widened to more than 20 percentage points in the highest income group.

The effect of location of residence was more pronounced for white people; in nonmetropolitan areas, the proportions were approximately 6 percentage points lower. Nonmetropolitan residence depressed the proportions an average of only about 2 percentage points for black people.

Conclusion

For both race and residence groups, the poor exhibit lower utilization of dental services than those above the poverty level. Although utilization by black people is lower than that by white people, the race differential is relatively small when income is below poverty, particularly for older adults. The steady increase in dental utilization with increasing income that is observed for white people is not as pronounced for black people. The lower utilization among nonmetropolitan residents tends to be independent of income level and is more pronounced among black children than among white children and among elderly white adults than among elderly black adults.

Table D. Persons 45–64 years of age with at least 1 dental visit during the past 2 years, according to location of residence, race, and family income level: United States, 1976–78

Race and family income level	Location of residence Total	 Metropolitan	 Nonmetropolitan
	Percent of population		
All races			
All incomes[1]	61.4	64.5	54.4
Below poverty	37.5	40.2	34.1
100–150 percent poverty	42.8	44.1	40.9
150–200 percent poverty	51.1	53.4	47.1
Above 200 percent poverty	70.1	72.0	64.8
White			
All incomes[1]	62.9	66.5	55.6
Below poverty	37.5	40.6	34.3
100–150 percent poverty	43.1	44.8	41.2
150–200 percent poverty	51.8	54.5	47.5
Above 200 percent poverty	70.7	72.9	65.0
Black			
All incomes[1]	46.1	48.5	37.7
Below poverty	37.1	38.9	32.9
100–150 percent poverty	40.5	41.2	38.7
150–200 percent poverty	44.9	46.2	39.7
Above 200 percent poverty	57.3	57.6	55.0

[1] Includes respondents who did not report income (9 percent of all interviewees).

NOTES: Data from 1976, 1977, and 1978 were combined. Family income was categorized to approximate the official poverty income level adjusted for family size; for example, poverty was defined at $7,000 for a family of 4 and $4,000 for a family of 2.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table E. Persons 65 years of age and over with at least 1 dental visit during the past 2 years, according to location of residence, race, and family income level: United States, 1976-78

Race and family income level	Location of residence		
	Total	Metropolitan	Nonmetropolitan
	Percent of population		
All races			
All incomes[1]	39.9	43.4	34.0
Below poverty	23.4	26.5	20.3
100-150 percent poverty	31.6	33.3	28.8
150-200 percent poverty	39.6	41.4	36.8
Above 200 percent poverty	57.1	59.1	52.1
White			
All incomes[1]	41.2	45.2	34.8
Below poverty	23.5	27.3	20.1
100-150 percent poverty	32.0	34.2	28.8
150-200 percent poverty	40.1	42.0	37.1
Above 200 percent poverty	57.9	60.4	52.3
Black			
All incomes[1]	26.4	27.6	23.5
Below poverty	22.6	23.4	21.3
100-150 percent poverty	26.0	24.7	29.1
150-200 percent poverty	31.9	34.1	22.6
Above 200 percent poverty	35.6	35.6	35.7

[1] Includes respondents who did not report income (9 percent of all interviewees).

NOTES: Data from 1976, 1977, and 1978 were combined. Family income was categorized to approximate the official poverty income level adjusted for family size; for example, poverty was defined at $7,000 for a family of 4 and $4,000 for a family of 2.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Perhaps the most obvious explanatory factor associated with the residence differentials is the availability of dental resources. Metropolitan areas have a more favorable dentist-to-population ratio than nonmetropolitan areas; the dentist-to-population ratio is more than twice as high in metropolitan areas.[3]

The poor-to-nonpoor differential in utilization supports the notion that the cost of dental services inhibits utilization among the poor of both races. However, there is little difference in the proportions without a dental visit for those who are classified as poor or 100-150 percent above poverty; this finding is consistent with an "income threshold" effect evidenced in other research. Salber et al. (1976) found that dental visits for black people in the rural community under study did not increase substantially with income categories less than $12,000.

The NHIS data presented here indicate that a threshold income effect may also exist for white adults 17-44 years of age, although a direct relationship generally exists between income and utilization for the other age groups. If the likelihood of contact with the dental system rises in accordance with income, then the much higher utilization for white people with incomes greater than 200 percent of poverty than for black people in this income category may result from the fact that, within this category, white people have higher incomes.

In addition to addressing the role of structural barriers, further analyses must also consider the many variables that affect the demand for dental services. Factors such as education, socioeconomic status, and early childhood training affect beliefs and attitudes about dental care that may impede utilization. Studies such as that by Nikias (1968) have shown the persistence of socioeconomic differences in utilization when cost is controlled, that is, among populations where dental prepayment is introduced. Thus, differences in utilization by race or income status also reflect the influence of values and behaviors that are associated with those variables. Also, as Kronenfeld (1979) suggests, black people may experience more difficulty than white people in finding a dentist from whom to receive care.

To the extent that dental care is viewed as a preventive health matter rather than a response to severe symptoms, the individual's motivations and perceptions play an increasingly important role. Okada and Wan (1979) identified marked increases in dental patterns in five urban areas after financial and resource barriers were removed through the introduction of Medicaid coverage and Community Health Centers, respectively. However, despite the increases, the generally low level of utilization among black people and the poor led to the conclusion that the removal of structural barriers permitted people to take care of existing oral health problems but did not promote preventive dental care practices. Other research has shown that the poor are less likely to seek preventive dental care services than the nonpoor (Nikias, 1975).

In summary, the differentials in utilization presented here suggest that the removal of structural barriers related to the supply and cost of dental services would improve access to dental care.

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Dental Manpower

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Introduction

This article highlights major issues and trends relating to the dental manpower force in this country. Statistics are presented that show a dramatic rise in the number of dentists and the dentist-to-population ratio during the past 15 years. However, much geographic variation exists in the supply of dental manpower among regions and States and between metropolitan and nonmetropolitan areas.

Other topics discussed are the practice setting of dentists, specialization in dentistry, trends in utilization of auxiliary dental personnel, and increased enrollment of women and minorities in dental schools in recent years. The intent and effect of various pieces of Federal legislation on the supply, distribution, and composition of the dental manpower force are also addressed.

Trends in Supply

Between 1950 and 1980, many dental schools expanded their capacity and 18 new schools were opened which helped trigger a significant increase in the number of dentists in the United States (American Dental Association, 1980a). Between 1950 and 1965, the number of active civilian dentists increased from 75,310 to 89,640, although the dentist-to-population ratio declined from 49.8 per 100,000 to 46.5 (Bureau of Health Professions, 1980a). After 1965, both the number of active civilian dentists and the dentist-to-population ratio increased steadily. By 1980, the number of active civilian dentists had grown to approximately 121,240, and this resulted in a ratio of 54.7 dentists per 100,000 population (Bureau of Health Professions, 1981a). This ratio was 18 percent higher than in 1965.

The rise in dental schools and dental supply can largely be attributed to a series of Federal legislative acts, beginning with the Health Professions Educational Assistance Act of 1963 (Public Law 88-129). This Act provided for grants to assist in the construction, expansion, and rehabilitation of dental schools and funds for school loans. The 1965 amendments to this Act (Public Law 89-290) modified and extended the loan and construction provisions and authorized grants to schools for scholarships and educational improvement programs. The Health Manpower Act of 1968 extended the existent programs (with some modifications) and relaxed the eligibility requirements for student scholarships. A major component of the Comprehensive Health Manpower Training Act of 1971 (Public Law 92-157) replaced institutional grants with capitation grants. One reason for this change was to encourage further expanded enrollment in dental schools. The Health Professions Educational Assistance Act of 1976 (Public Law 94-484) modified many of the earlier provisions and extended them through fiscal year 1980. However, the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35) eliminated the authority for construction and capitation grants (Bureau of Health Professions, 1980b).

Geographic Distribution

Great variation exists in the distribution of dentists among geographic regions (table A). In 1979, the number of active dentists per 100,000 population in the Northeast (66) and the Pacific (64) were notably higher than in the North Central and South (52 and 44, respectively). During the late 1970's, the Northeast and the Pacific also had the largest supplies of active non-Federal physicians per 100,000 population (215 and 203, respectively, in 1978). However, the North Central and South had equivalent physician-to-population ratios of 151 per 100,000 population. Among individual States, New York, Connecticut, and Massachusetts had the highest ratios of active civilian dentists to population (more than 70 per 100,000 population), while Alabama, Arkansas, and Mississippi had ratios about half as large (less than 36 per 100,000 population). The District of Columbia had a much higher ratio (87 active civilian dentists per 100,000 population) than any State. However, dentists in this city also serve many residents of Maryland and Virginia (Bureau of Health Professions, 1980a).

A large variation is also evident in the dentist-to-population ratios between metropolitan and nonmetropolitan areas. In 1979, the average number of active civilian dentists per 100,000 population for all metropolitan areas in the United States was 60, compared with only 37 for nonmetropolitan areas. While the dentist-to-population ratio was 62 percent higher in metropolitan

Table A. Dentist-to-population ratios, according to geographic region and location: United States, 1979

		Metropolitan areas			Nonmetropolitan counties		
Geographic region	All areas	Total	Population		Total	Size of central cities	
			1 million or more	Less than 1 million		10,000 or more	Less than 10,000
	Number of active civilian dentists per 100,000 population						
United States	54.2	60.4	65.7	53.9	37.4	44.1	30.9
Northeast	66.3	69.9	76.2	59.8	46.2	47.4	43.3
New England	66.3	70.2	80.8	65.0	50.7	50.3	51.6
Middle Atlantic	66.3	69.7	75.6	56.2	43.9	45.9	38.7
North Central	51.7	56.6	60.6	50.8	40.5	46.9	35.0
East North Central	51.5	55.4	59.9	48.8	38.5	42.5	33.9
West North Central	52.2	61.1	63.5	57.6	42.7	53.9	36.0
South	43.5	51.4	55.5	49.1	29.3	36.6	23.7
South Atlantic	46.6	54.3	59.5	50.3	31.6	39.0	25.3
East South Central	40.2	52.2	41.3	52.6	27.3	36.7	21.5
West South Central	40.9	46.7	49.3	45.0	27.5	32.5	23.8
West	61.5	65.1	67.7	60.5	47.3	51.3	40.4
Mountain	54.2	61.2	65.1	59.7	43.3	49.4	37.1
Pacific	64.0	66.0	67.9	60.7	50.9	52.3	46.5

SOURCE: Division of Health Professions Analysis, Bureau of Health Professions, Health Resources Administration: Based on data from the Bureau of Economic and Behavioral Research, American Dental Association.

areas than in nonmetropolitan areas in 1979, the physician-to-population ratio in 1978 was more than twice as large in metropolitan as in nonmetropolitan areas (205 versus 86). The pattern of higher dentist-to-population ratios in metropolitan areas existed in all regions, divisions, and in most States.

Higher dentist-to-population ratios are also evident in larger metropolitan areas and in nonmetropolitan areas with larger cities. The ratio for metropolitan areas of one million or more population is 22 percent higher than for metropolitan areas with fewer than one million people (66 versus 54). Likewise, the ratio for nonmetropolitan counties that include a city with a population of 10,000 or more is about 42 percent higher than for other nonmetropolitan counties (44 versus 31). This pattern is even stronger for physicians. In 1978, the physician-to-population ratio was 36 percent higher in the larger metropolitan areas than in the smaller ones (233 versus 171). Within the nonmetropolitan classification, the differential between the two groups by size of largest city was about 82 percent (111 versus 61).

These urban and rural differentials are the result of social and economic determinants of location for dentists. Dentists appear to give geographic factors high priority in determining their locations. Many dentists choose to live in urban areas to be near social, recreational, and cultural activities (American Dental Association, 1973).

Federal legislation of the 1960's and 1970's was designed to mitigate the inequitable geographic distribution of health professionals. The 1965 amendments to the Health Professions Educational Assistance Act initiated a program that released health professions students from a part of their Federal loan obligations if they agreed to practice in a shortage area. During ensuing years, the percent of the loan that could be forgiven was increased and the types of loans eligible were expanded. Furthermore, the Emergency Health Personnel Act of 1972 (Public Law 92-585) was the first to establish by statute the National Health Service Corps (NHSC). This program was intended to improve health care delivery in areas of excessive need. The NHSC Scholarship Training Program created by this Act provided scholarships for students who agreed to work as a member of the Corps in a shortage area for a designated period after graduation. The Omnibus Budget Reconciliation Act of 1981 has continued the authority for NHSC.

Scholarships were not made available to dental students until 1976. Therefore, at the beginning of the NHSC program, volunteer dentists were placed in shortage areas. Currently, NHSC dentists include scholarship recipients who serve 1 year for each year of scholarship support with a minimum obligation of 2 years. Under the new private practice option, some scholarship recipients choose to receive financial aid to help establish a private practice in a shortage area as an alternative to serving in the Corps (Bureau of Health Professions, 1980b).

The Federal Government has designated dental shortage areas since 1973. Counties with fewer than 33 dentists per 100,000 population received such designation for purposes of loan repayment programs from 1973 through September 1977. Meanwhile, beginning in October 1974, the criterion of 20 dentists per 100,000 population was used to identify "critical" dental shortage areas (both counties and subcounty service areas) eligible for placement of NHSC dentists.

In January 1978, modified criteria were implemented to better identify shortage areas for both types of programs, in accordance with provisions of the Health Professions Educational Assistance Act of 1976. Under these new criteria, the number of dentists is adjusted to reflect differential productivity based on factors such as age, type of practice, hours of work, and the use of auxiliaries. The resident population is adjusted to take into account the presence of seasonal and migrant populations. A basic criterion of 20 dentists per 100,000 population is adjustable upwards to 25 per 100,000 where fluoridation is not present or high poverty prevails. The new criteria also allow for particular population groups and facilities to be designated as "shortage areas" (Bureau of Health Manpower, 1979a and 1980). At the beginning of 1981, 875 geographic areas inhabited by 20.3 million people were designated as dental manpower shortage areas. In contrast, there were 1,790 primary medical shortage areas with about twice as many people (40.1 million) residing in them (Bureau of Health Professions, 1981b).

Between 1973 and 1980, 884 dentists agreed to practice in shortage areas in return for Federal repayment of their educational loans (Bureau of Health Manpower, 1980). In September 1980, 344 dentists and 12 dental hygienists were working in various dental shortage areas under NHSC (Bureau of Health Personnel Development and Service, 1981). The ability of these programs to alleviate geographic shortages in the long run, however, depends on rates of attrition and retention beyond the required service periods.

Some evidence exists that the geographic distribution of active dentists improved during the 1970's (table B). Between 1970 and 1979, the number of counties with no dentists declined by 12 percent and the number with 25 dentists or less per 100,000 population declined by 5 percent. During the same period, the number of counties with more than 25 but less than 50 dentists per 100,000 population increased by 10 percent, while the number with the greatest supply of dentists (50 or more per 100,000 population) declined by 10 percent. However, this shift in the distribution of dentists may be in part the result of greater population growth in nonmetropolitan than in metropolitan areas during the last decade (U.S. Bureau of the Census, 1981).

Table B. Distribution of counties, according to dentist-to-population ratios: United States, 1970 and 1979

Dentist-to-population ratio[1]	Year		Percent change 1970-79
	1970	1979	
	Number of counties		
No dentists	279	245	−12
25 dentists or less	1,025	974	−5
More than 25 but less than 50 dentists	1,334	1,466	+ 10
50 dentists or more	476	429	−10

[1] The number of active civilian dentists per 100,000 population.

SOURCE: Division of Health Professions Analysis, Bureau of Health Professions, Health Resources Administration: Selected data.

Practice Setting

In 1980, most active dentists (approximately 87 percent) practiced either full time or part time in private practice settings. The remaining 13 percent worked in a variety of institutional settings, including the Armed Forces, local, State, and Federal Government, hospitals, universities, and health organizations (American Dental Association, 1980a).

In its 1977 Survey of Dental Practice, the American Dental Association reported that approximately 78 percent of all private practitioners were in solo practice, 14 percent practiced with one other dentist, and the remaining 8 percent practiced in multiple dentist settings.

Technological and organizational changes in dentistry have dramatically altered the practice setting of dentists. Historically, a typical dentist would practice alone using a single operatory, with few or no dental auxiliaries. However, the practice setting has evolved into a highly complex model in which one or more dentists operate with a variety of dental auxiliaries using multiple operatories, highly differentiated equipment, and sophisticated management concepts.

Among the factors likely to affect future practice are the advent of franchised and retail store-based practice models, an increased use of advertising techniques, the existence of more sophisticated financing mechanisms, the introduction of computer technology, and increased competition within the dental sector.

Specialization

About 14 percent of all active dentists were specialists in 1980. The dental profession recognizes eight specialties beyond general dentistry. Orthodontists were the largest group; accounting for about 2 of every 5 dental specialists. Oral surgeons, the next largest group, accounted for nearly one-fourth of all specialists. Periodontists and pedodontists each constituted slightly more than 10 percent of the specialist pool. Four other specialty types (endodontists, prosthodontists, oral pathologists, and public health dentists) comprised the remaining 14 percent.

In 1980, about 14 percent of all active male dentists were specialists, compared with 5 percent of active female dentists. A larger proportion of female specialists were pedodontists (38 versus 12 percent), whereas a substantially larger portion of male specialists were oral surgeons (23 versus 3 percent).

During the past 15 years, a fairly rapid increase has occurred in the proportion of active dental specialists, growing from 6 percent in 1965 to 14 percent in 1980. In the past few years, however, the rate of increase in specialization has slowed. Between 1975 and 1980, the proportion of specialists rose from 12 to 14 percent, an annual growth rate appreciably smaller than between 1965 and 1975.

In recent years, a significant increase has occurred in the number of graduates from general practice dental residency programs. In 1979, there were 817 general practice residency graduates, compared with 530 in 1973 (American Dental Association, 1973-74 and 1979-80). A general practice residency program is a 1- or 2-year sequential hospital training program designed to provide the dental graduate with a variety of experiences in providing complex dental treatment services. The program incorporates rotational assignments in hospital medical services, including experience in the emergency room. The experience gained from general practice residencies should enable the future general practitioner to provide a more comprehensive range of services and to treat more complex problems.

To prevent overspecialization in dentistry and to better prepare dentists for service in shortage areas, the Federal Government has encouraged growth in general practice residencies through the Health Professions Educational Assistance Act of 1976. To receive capitation grants under this Act, dental schools are required to have at least 70 percent of newly filled positions in the primary care areas of either general dentistry or pedodontics. The Act also provides for support of general practice residency training programs and stipend support for residents enrolled in these programs. Furthermore, to be eligible for capitation funds, dental schools are required by the Act to either establish remote site training experience for their students or expand enrollment (Bureau of Health Professions, 1980b).

Auxiliary Manpower

Dental auxiliary personnel working on the dental team include dental hygienists, dental assistants, and dental laboratory technicians. The dental hygienist is a licensed oral health educator and clinical operator who, as an auxiliary to the dentist, uses preventive, therapeutic, and educational methods to control oral disease for individuals and groups. The dental assistant typically assists the dentist at chairside, prepares diagnostic aids, performs clinical and laboratory supportive functions, and provides oral health instructions. Dental laboratory technicians construct oral appliances following a dentist's written prescription.

Accredited training programs exist for hygienists, assistants, and lab technicians. The curricula of some hygiene and assisting schools include training in one or more expanded functions (depending on which expanded functions a State allows that particular auxiliary to perform). Hygienists receive a minimum of 2 years of training. Though most assisting schools are 1-year programs, many have found it necessary to add curriculum time to teach expanded functions. Training programs for lab technicians usually cover 2 years.

The use of auxiliary dental manpower has been increasing. In 1955, about 77 percent of all independent dentists (i.e., those not salaried) employed at least one auxiliary. By 1978, nearly all dentists (about 95 percent) utilized auxiliary personnel of some type (American Dental Association, 1980a). This trend is noteworthy since the use of auxiliaries tends to increase the overall productivity of a dentist; evidence exists that there is a strong and direct relationship between the extent of auxiliary utilization and the average number of patient visits per week (Bureau of Health Manpower, 1979a).

The employment of dental hygienists has risen dramatically during the past few decades. Only 10 percent of independent dentists in 1955 employed at least one dental hygienist, while 53 percent employed hygienists in 1978 (American Dental Association, 1980a). In 1977, there were 32,200 dental hygienists, a ratio of 27.3 per 100 active dentists. This ratio has increased more than five-fold since 1955 (Bureau of Health Manpower, 1979b). In 1977, the number of active hygienists per 100 dentists was about half as large as the proportion of dentists employing hygienists, indicating that many hygienists worked for more than one dentist.

The proportion of dentists employing assistants also showed a notable increase between 1955 and 1978, rising from 71 to 90 percent (American Dental Association, 1980a). The number of active dental assistants was 144,700 in 1977, a ratio of 123 active assistants per 100 active dentists. This represents a sizable increase since 1955 when there were about 3 active dental assistants to every 4 active dentists (Bureau of Health Manpower, 1979b).

The Allied Health Professions Personnel Training Act of 1966 (Public Law 89-751) was the first to authorize Federal support of allied health professions training. This support provided for construction grants, educational improvement grants, traineeships, and project grants to eligible allied health training centers or their affiliated hospitals. During the next several years, legislation was passed which extended these programs and added new ones. Then in 1973, the Health Program Extension Act (Public Law 93-45) was passed which eliminated construction grants, basic improvement grants, scholarship grants, work-study aid, and student loan assistance.

In recognition of the increasing role of auxiliaries in dental care, the Health Professions Educational Assistance Act of 1976 continued Federal support to schools of dentistry to help finance programs for the training of expanded function dental auxiliaries and for the training of dental students in the organization and management of multiple auxiliary dental team practice. These authorities were repealed, however, by the Omnibus Budget Reconciliation Act of 1981 (Bureau of Health Professions, 1980b).

In recent years, some State jurisdictions have amended their laws to permit the dentist to delegate a wide range of clinical functions to dental hygienists and dental assistants. Evidence exists that an increasing number of States are permitting these dental auxiliaries to perform expanded functions (American Dental Association, 1980b).

Women and Minorities

Although most dentists are male, a substantial increase occurred in the enrollment of women students in dental schools during the 1970's. At the beginning of the decade

(1971-72), only 3 percent of entering dental students were women; by 1979-80, they comprised 18 percent of the first-year students (American Dental Association, 1980a). As a result, future increases can be expected in the percentage of women dentists from the 1980 level of 2-3 percent.

The supply of women dentists is somewhat concentrated geographically. At the beginning of 1980, about 52 percent of all active civilian female dentists were located in six States (Massachusetts, New York, Pennsylvania, Illinois, Texas, and California), compared with 41 percent of all male dentists. The percentage of women dentists ranged among States from none in Idaho to a high of 3.3 percent in Massachusetts and Illinois (American Dental Association, 1980a).

In contrast to women, enrollments of minorities in dental schools increased only slightly during the 1970's. About 12 percent of all first-year dental students in 1979-80 were classified as minority, compared with about 9 percent in 1971-72. Black students accounted for only about 37 percent of all minority students in 1979-80, compared with 59 percent of all minority students in 1971-72. Throughout the 1970's, the proportion of all first-year dental students that were black was about 5 percent (American Dental Association, 1980a).

Summary

Since 1965, the number of active civilian dentists as well as the ratio of dentists to population has increased steadily. These increases can be attributed, in part, to Federal policy initiatives.

Much geographic variation is evident in the supply of dentists. Dentist-to-population ratios tend to be greater in metropolitan areas. Furthermore, greater supplies of dentists exist in larger metropolitan areas and in larger cities within nonmetropolitan counties. These differentials result from social and economic determinants of location for dentists. There has been much Federal legislation directed at improving the inequitable geographic distribution; some evidence exists that the distribution has improved during the 1970's.

Most dentists (about 87 percent in 1980) practice in private noninstitutional settings. About 3 out of every 4 dentists are in solo practice. With expanded technology and increased use of auxiliaries, the dental practice setting has become quite complex.

During the past 15 years, a fairly rapid increase has occurred in the proportion of active dentists who are specialists. About 14 percent of all dentists were specialists in 1980. Recently, however, the rate of increase in specialization has slowed. The Federal Government has encouraged a rise in the number of general practice residencies as a means of mitigating overspecialization and of better preparing dentists for service in shortage areas.

The use of auxiliary dental manpower has been increasing. As of 1978, nearly all dentists employed at least one auxiliary. This trend is noteworthy since the use of auxiliaries tends to increase the overall productivity of a dentist. In particular, the proportion of dentists employing hygienists has risen dramatically.

A substantial increase occurred during the 1970's in the proportion of women among first-year dental students. Enrollments of minorities as first-year students have also increased, but at a slower rate than for women.

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Growth in Health Maintenance Organizations

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Introduction

Health maintenance organizations are not new. They have been in existence since the late 1920's, although under different names, such as prepaid group practice plans or foundations for medical care. While this type of delivery service had a small group of vocal adherents, it was not until the 1970's that expansion of such plans became a matter of Federal policy.

In February 1971, President Richard M. Nixon delivered a health message to the Congress in which he called for innovation and reform in the delivery of health care to restrain the rapid increase in health care costs. He advocated expansion of the health maintenance organization (HMO). This position was amplified in May of that year in a White Paper, "Towards a Comprehensive Health Policy for the 1970's," developed by the Department of Health, Education, and Welfare. That paper defined HMO's as "organized systems of health care, providing comprehensive services for enrolled members, for a fixed, prepaid annual fee. No matter how each HMO may choose to organize itself (and there are various models), from the consumer's viewpoint, they all provide a mix of outpatient and hospital services through a single organization and a single payment mechanism."

The Administration's advocacy of HMO's to contain costs while preserving the quality of health care was based on the performance of a small number of prepaid plans in existence in 1970. Published data, summarized in the White Paper of 1971, showed three areas in which they differed from traditional fee-for-service health care:

- Use of inpatient services was 40-50 percent lower.
- Overall costs were 15-20 percent lower.
- Quality of care was better or at least equal.

To aid in the expansion of HMO's, the Administration submitted a bill to Congress early in 1971 in which the definition of HMO's was embodied, but it was not until December 1973 that a bill was finally passed and signed into law (Public Law 93-222) (Falkson, 1980). That act, among other things, provided financial support for HMO development, relief from certain restrictive State laws (Aspen Systems Corporation, 1973), and mandatory market access for HMO's, i.e., under the act, certain classes of employers were required to offer their employees the option of membership in an HMO health plan, if available. To obtain these benefits, the HMO had to conform to a strict and extensive set of requirements. Among these were: acceptance of community rating, a premium setting concept where the high- and low-risk groups in a community are averaged; open enrollment, a concept of recruitment designed to guard against adverse selection of low-risk groups to the disadvantage of high-risk groups; and the provision of a mandatory set of basic benefits.

That act was subsequently amended in 1976 (Public Law 94-460) to limit the original restrictions, particularly with respect to open enrollment, community rating, and basic benefits, thereby making conformance easier, and presumably increasing the number of qualified HMO's. From the HMO's perspective, Federal qualification provided two distinct benefits—availability of Federal loans and mandatory access to markets—but the price for these benefits was Federal regulation. Not all existing HMO's chose to become qualified. Some did not because they did not need the money. Still others did not wish to become subject to the regulations. The act was further amended in 1978 to provide loans for construction, training for managers, and provide safeguards against conflicts of interest and other financial abuses (Public Law 95-559).

While the original Health Maintenance Act was making its way through the legislative process, the Congress, in an attempt to contain the escalating costs of the Medicare program, amended the Social Security Act in 1972 (Public Law 92-603). They added Section 1876 which included specific conditions under which HMO's could contract to enroll Medicare beneficiaries on either a risk or cost basis. Under a cost contract, the HMO is paid the "reasonable" costs of the covered services it furnishes to its enrollees who are beneficiaries under Title XVIII of the Social Security Act (42 CFR 405.2040-405.2048). Under a risk-based contract, the total payment to the HMO is determined by comparing the HMO's adjusted per capita incurred cost of providing covered services to the adjusted average per capita cost of providing such services to a similar beneficiary population outside the HMO. If the former cost is less than the latter, savings up to 20 percent are shared equally by the HMO and the Government. If the adjusted per capita incurred cost is greater than the adjusted average per capita costs, the losses are borne by the HMO (42 CFR 405.2049-405.2054).

With this brief background, the growth both in number of HMO's and in enrollment is discussed. First, overall growth is examined, looking at the time period before and after the Federal legislation.[1] Then growth in HMO enrollment for three major Federal programs is examined because of the number of people involved: the Federal Employees Health Benefits Program, Medicare, and Medicaid.

Nationwide Growth

Number of HMO's

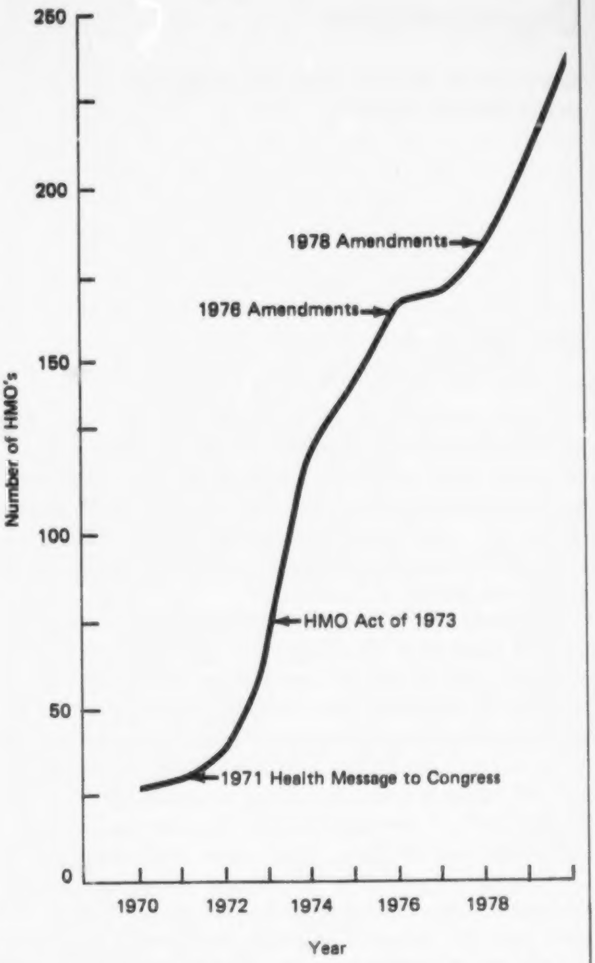
For this analysis, an HMO is defined as an organization that provides at least ambulatory and inpatient services to a voluntarily enrolled population on a prepaid basis. The HMO may be federally qualified or qualifiable as indicated in the introduction or unqualified. Private employer and union organizations that restrict membership to a particular group of employees or union members have not been included, nor have those short-lived California Prepaid Health Plans organized in the middle 1970's to reduce the costs of Medicaid, which are discussed later in this article.

From the start of the Ross-Loos Clinic in 1929, generally accepted to be the first of the HMO's, the number of HMO's grew slowly until 1965 when about 20 plans were in existence. By the beginning of 1970, the number had increased to 26, with rapid acceleration in the following years. After 1970, the average rate of increase was about 22 HMO's per year (figure 1). This increased rate after 1970, compared with earlier years, began at roughly the time of Federal involvement in 1971, and it was relatively unaffected by the passage of the HMO Act of 1973 and subsequent amendments.

Not only was there a substantial increase in the number of HMO's but there was also a substantial increase in the number of States in which they operated. This increased geographic spread was observed particularly during the 1970-80 period (table A).

Number of Enrollees

Enrollment figures before 1970 are not based on organized data collection. They are based on estimates made by assuming that the growth in total membership



NOTE: California prepaid health plans, which were eliminated by 1977, are excluded.

SOURCE: Office of Health Maintenance Organizations, Department of Health and Human Services: Selected data.

Figure 1. Number of health maintenance organizations (HMO's): United States, 1970-80

Table A. States and jurisdictions with health maintenance organizations (HMO's) in operation: United States, selected years 1930-80

Year	HMO's in operation	
	Number of States	Jurisdictions
1930	2	-
1940	3	D.C.
1950	6	D.C.
1960	9	D.C.
1971	15	D.C., Guam
1976	35	D.C., Guam
1980	37	D.C., Guam

SOURCE: Office of Health Maintenance Organizations, Department of Health and Human Services: Selected data.

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[1] Unless otherwise cited, the data presented are attributable to two basic sources. Data for 1970-75 and 1978-80 are from surveys conducted by the Office of Health Maintenance Organizations, Department of Health and Human Services. Data for 1976 and 1977 are from surveys conducted by a coalition of private organizations, including the Group Health Association of America, the American Group Practice Association, the American Association of Foundations for Medical Care, the Health Insurance Association of America, the Blue Cross Association, and the National Association of Blue Shield Plans.

paralleled that of the Kaiser organization, a large and influential HMO, for which good data are available (Somers, 1971). Up to 1950, enrollment growth followed the slow but steady growth in the numbers of HMO's. In each of the next 10 years, however, HMO enrollment more than doubled, reaching 3.1 million enrollees in the 30 prepaid plans in existence late in 1970 (figure 2).

Strong acceleration in HMO enrollment was thus established well in advance of the 1971 initiative and has continued until 1980 with an estimated 9.5 million members, a 300-percent increase since 1970.

Government Programs

Federal Employees Health Benefit Plan

The Federal Employees Health Benefit Plan (FEHBP) was initiated under two acts of Congress. The first was the Federal Employees Health Benefit Act of 1959 which provided health benefits for employees and their dependents (Public Law 86-382). The second was the Retired Federal Employees Health Benefits Act of 1960 (Public Law 86-724), which called for a health benefits program for annuitants.

As a result of these acts, employees or annuitants were offered a choice of two national plans—a service benefit plan offered by Blue Cross and Blue Shield and an indemnity plan underwritten by AETNA. Employees could also choose from a variety of employee organization plans and from a number of prepaid plans (now usually called HMO's). The prepaid plans included group practice plans as well as individual practice plans.

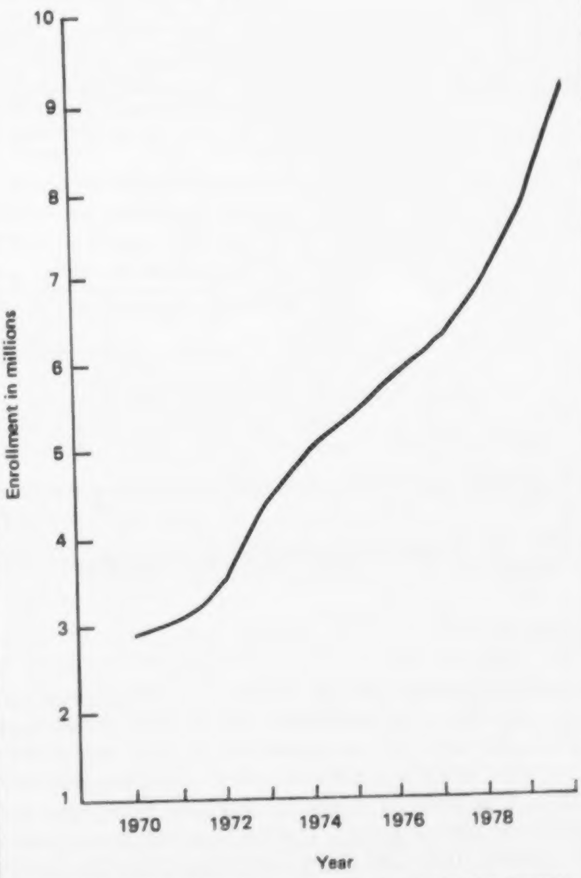
The number of persons covered by FEHBP has grown at a rate of more than a quarter million people per year—from 5.48 million in fiscal year 1961 to 10.03 million in fiscal year 1979, an increase of 83 percent—making the program the largest group plan in the United States (U.S. Civil Service Commission, selected years 1962-78; U.S. Office of Personnel Management, 1979-80). During the same time period, HMO's increased their members from 315,731 to 867,180, an increase of 175 percent, which was substantially greater than the growth of the overall FEHBP program. However, the HMO share of covered employees rose only moderately from 5.8 to 8.6 percent, an increase of 48 percent (figure 3).

As for the number of HMO's under contract to FEHBP, little change was observed from the inception of the program in 1960 to 1975 when the number of plans hovered around 20. After 1975, the numbers increased substantially each year, reaching 69 in 1979. However, while a marked increase has occurred in the number of HMO's, most of the HMO enrollees—74 percent of the 1979 enrollment—were in the original 1961 HMO plans, 15 of which are still under contract to FEHBP (U.S. Civil Service Commission, selected years 1962-78; U.S. Office of Personnel Management, 1979-80).

Medicare

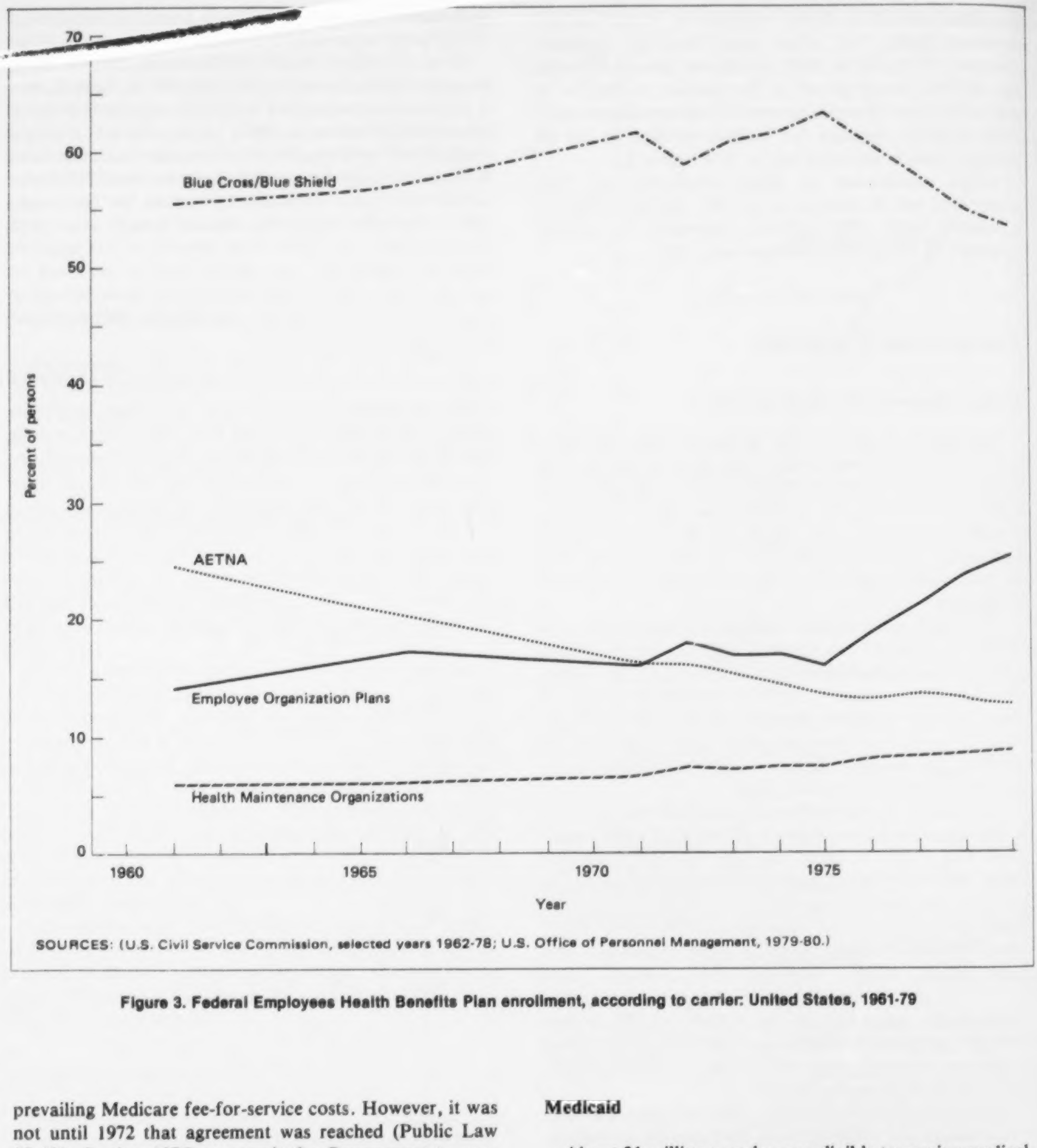
About 25 million people are eligible to receive services under Medicare, but only about 554,000 of those eligible (2.2 percent) were enrolled in HMO's or prepaid practice plans as of December 31, 1980 (Fowler, 1981). Enrollment of eligibles in prepaid plans on a cost-reimbursement basis has been authorized since 1967 under Section 1833 of the Social Security Act. Growth in enrollment has been steady with a somewhat increasing rate of growth after 1972 (Fowler, 1981), but most of the enrollment has been the result of "aging in," i.e., people who are members of prepaid plans convert their membership upon becoming eligible for Medicare benefits. In 1980, 34 plans were participating under Section 1833.

In 1970, both the Congress and the Administration began to explore ways to contain the escalating costs of the Medicare program. Legislation was introduced in 1970 to permit the Government to contract with HMO's and to provide prospective reimbursement at 95 percent of the



SOURCE: Office of Health Maintenance Organizations, Department of Health and Human Services: Selected data.

Figure 2. Health maintenance organization (HMO) enrollment: United States, 1970-80



SOURCES: (U.S. Civil Service Commission, selected years 1962-78; U.S. Office of Personnel Management, 1979-80.)

Figure 3. Federal Employees Health Benefits Plan enrollment, according to carrier: United States, 1961-79

prevailing Medicare fee-for-service costs. However, it was not until 1972 that agreement was reached (Public Law 92-603, Section 1876) to permit the Government to contract with HMO's on either a cost or risk basis (Falkson, 1980). This legislation was far different from what had been proposed originally. The first contract was awarded in October 1976, following the preparation of the appropriate regulations. The number of contracts has grown substantially—1 in 1976, 13 in 1978, 29 in 1979, and 39 by the end of 1980 (Fowler, 1981). However, only one of these contracts is of the risk type.

Medicaid

About 21 million people were eligible to receive medical services under Medicaid in 1980. However, only 16 of the 50 States have contracted with HMO's to provide these services to Medicaid eligibles, and only about 265,000 of those eligible (1.5 percent) were enrolled in 1980 (Office of Health Maintenance Organizations, 1980). Four States—California, Maryland, Michigan, and New York—accounted for 85 percent of that enrollment.

In contrast to the consistent but slow growth of HMO enrollment among Federal employees and Medicare beneficiaries, the Medicaid enrollment rose and fell rapidly with events associated with California's Prepaid Health Plan activity.

In 1972, California implemented a different method of organizing, financing, and delivering health care to beneficiaries of Medi-Cal, the State Medicaid program, to combat the continuous rapid rise in the cost of that program. A new law passed by the California legislature in 1971, the Medi-Cal Reform Act, permitted the California Department of Health to contract with prepaid health plans (PHP's) for the delivery of health care to Medicaid beneficiaries. The PHP's were similar to HMO's in that both were private organizations that agreed to provide a broad range of health services for a fixed monthly fee either through their own employees or through contracts with other providers.

The program grew rapidly, reaching a peak in June 1975 with more than 250,000 eligibles enrolled in 45 PHP's (California State Health Department, 1972-80). As the program grew, so did reports on fraud, abuse, self-dealing, improper marketing and enrollment practices, and less than adequate quality of care. Reform of the system was begun in California in January 1975 and by the Federal Government (U.S. Senate, 1978) following the amendments to the HMO Act in 1976, permitting, with limited exceptions, only qualified HMO's to contract with States to provide appropriate health services.

Just as the enrollment and number of PHP's increased dramatically, they both decreased precipitously after the peak in 1975. By November 1977, only 125,000 were enrolled in 13 PHP's, a 50-percent reduction in enrollees and a 71-percent reduction in the number of PHP's. Since 1977, relatively little change has been observed (California State Health Department, 1972-80).

National enrollment data for HMO's or PHP's has been computed only for selected time periods (table B). While the number of enrollees increased by 45 percent from 1972 to 1980, the number in 1980 (265,000) represented only 1.5 percent of those eligible, with the peak enrollment recorded in November 1977. On the other hand, the number of HMO's or PHP's providing care increased from 17 in 1972 to 48 in 1980, an increase of 182 percent. Despite the problems experienced by California with its PHP's in the mid-1970's, the increase in enrollees from 1972 to 1980 was greater in California than in the remainder of the States (58 percent versus 38 percent).

As indicated earlier, only 16 States and the District of Columbia were involved in contracting with HMO's in 1980, up from 11 in 1972. Although this is a substantial increase in percentage terms, from a practical point of view, it is not significant.

Summary

A steady increase has occurred in both the number of HMO's in existence and the number of people enrolled in them, particularly since the mid-1970's. However, enrollments in HMO's in 1980 represented only about 5 percent of all people covered by either private or public health insurance. This indicates that substantial growth of this system of health delivery may lie ahead.

Table B. Medicaid enrollment and health maintenance organizations (HMO's) with Medicaid enrollees, according to location: United States, selected years 1972–80

Year and location	Medicaid enrollment	
	Number of persons in thousands	Number of HMO's
1972		
Total	183	17
California	71	4
Other States	42	13
1973		
Total	287	60
California	197	43
Other States	90	17
1977		
Total	305	46
California	125	13
Other States	180	33
1980		
Total	265	48
California	111	12
Other States	154	36

SOURCES: (Medical Services Administration, 1972 and 1974; Office of Health Maintenance Organizations, 1977 and 1980.)

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Health Care Expenditures

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Introduction

During the past two decades, the Nation's health care bill has been rising rapidly at an average rate of 11.7 percent per year. In 1980, health care expenditures in the United States totaled $247.2 billion, an average of $1,067 per person (Gibson and Waldo, 1981). During the same period, the gross national product (GNP) has risen at an average annual rate of 8.6 percent. Consequently, national health expenditures have been claiming an increasing share of the GNP, reaching 9.4 percent in 1980 (detailed table 60). These statistics are viewed with considerable concern—both in terms of the rate of increase and the current absolute levels of health care spending.

This article briefly discusses increasing health care expenditures in other industrialized countries. Then, changing patterns of health care spending in this country and the components of increase in that spending are examined.

Expenditures in Other Countries

The phenomenon of rising health care expenditures is not unique to the United States, nor are expenditures rising more rapidly in this country than elsewhere. Other western industrial nations have been experiencing similar increases in recent years, with many exhibiting annual rates of growth for health expenditures in excess of 16 percent. For instance, a comparison of health care costs among nine industrialized countries, for the period 1969-76, shows six countries with average annual increases ranging from about 17 to 21 percent; only the United States, Canada, and Sweden registered increases of less than 15 percent (Simanis and Coleman, 1980).[1]

In addition, health care costs for all these countries have generally been increasing at a more rapid rate than their GNP. As a result, health care expenditures have risen as a percent of GNP and thus, an increasing share of national resources is being allocated to health care. Although the United States ranked second among these nine countries in the percentage of GNP devoted to health care in 1960, by 1975 it ranked fourth (table A).

Table A. Health care expenditures as a percent of gross national product: Selected countries, selected years 1960-75

Country	Year			
	1960	1965	1970	1975
Australia	5.0	5.2	5.6	7.0
Canada	5.6	6.1	7.1	7.1
Finland	4.2	5.2	5.9	6.8
France	5.0	5.9	6.6	8.1
Federal Republic of Germany	4.4	5.2	6.1	9.7
Netherlands	---	5.0	6.3	8.6
Sweden	3.5	5.8	7.5	8.7
United Kingdom	3.8	3.9	4.9	5.6
United States	5.3	5.9	7.2	8.4

SOURCE: (Simanis, J. G., and Coleman, J. R., 1980.)

Sources and Types of Payment

Because of the increase in private health insurance coverage and government programs, the percentage of health care charges paid out-of-pocket has been declining in the United States for the past several decades. In 1950, two-thirds of personal health care payments were made by the patient; by 1980, this proportion had declined to one-third (detailed table 67).

Third-Party Payment

Private health insurance paid approximately 27 percent of the Nation's personal health care bill in 1980. The growth of health insurance began gaining momentum during World War II and continued at a rapid rate through the 1950's and early 1960's. Public expenditures for health care include payments by Federal, State, and local governments. In 1965, public expenditures for personal health care represented 22 percent of total outlays, increasing to 40 percent by 1980 (detailed table 67). The Federal share of the public payments is by far the largest, and it began to grow rapidly with the implementation of Medicare and Medicaid in 1966. While State expenditures for Medicaid also grew at a rapid rate, other categories of State and local health care expenditures have not. For example, net expenditures for State and local hospitals comprised approximately one-half of total State and local health care expenditures in 1965. From 1969 to 1979, the number of beds in State and local psychiatric hospitals decreased by about 65 percent, thus retarding growth in this area of expenditure. The number of beds in other types of State and local hospitals either remained relatively stable or decreased as well. Because of the slower growth in this and other categories of State and local health care expenditures, the impact of rapid growth in Medicaid expenditures has been mitigated. Thus, as a whole, State and local health care expenditures maintained a level share of total health care expenditures.

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[1] The data in this study were adjusted to allow for differences in reporting procedures between countries in order to improve comparability. Although there are more recent data for some of these countries, they have not been similarly adjusted.

A fundamental purpose of private health insurance was to spread the risk of large health expenditures, thereby reducing the possibly catastrophic burden on a family for an unexpected and costly illness. On the other hand, government programs, such as Medicare and Medicaid, were intended to remove barriers to access for medically underserved segments of the population, primarily the aged and the poor.

Available data are not sufficient to accurately measure the extent to which these objectives have been met. It appears that the percentage of families spending substantial proportions of their incomes on medical care did not change appreciably. For example, approximately 11 percent of families spent 15 percent or more of their incomes on medical care in 1953, compared with 10 percent of families in 1970 (Andersen, Lion, and Anderson, 1976; Anderson and Feldman, 1956). Increased third-party coverage for many types of health care has possibly enabled families to afford normally uncovered types of care such as dental care and psychiatric treatment. Alternatively, without expanded third-party coverage, the proportion of families spending an excessive portion of their income on health care could have substantially increased rather than remaining relatively stable, given the rapid growth in the sophistication and cost of health care.

A major area of change in utilization is for hospital care; both private health insurance and public programs have emphasized hospital coverage. In 1930, a great disparity existed in hospital admission rates between income groups—a rate of 59 per 1,000 for the lowest income group, compared with 106 per 1,000 for the highest group. By 1953, the rates had equalized (Anderson and Feldman, 1956) and for the years since, hospitalization rates have remained relatively stable for higher income groups while increasing markedly for the lower groups (detailed table 42). Thus these rates are now considerably higher for lower income groups than for higher income groups. Most studies have shown that low-income groups experience more illness than do high-income groups (Luft, 1978).

While the growth of third-party payment has had desirable effects on the distribution of health care, it has also had an impact on health care costs. The presence of third-party payment tends to blur the relationship between the amount and type of health care services consumed and their costs. In other words, the out-of-pocket cost of health care to the consumer, at the time of services, is reduced or eliminated—encouraging both provider and consumer to increase utilization, demand higher quality care, and thereby generate higher costs.

Types of Expenditures

Another important factor in the growth of expenditures for health care has been the growth of the hospital sector. In addition to increased utilization and costs of inputs, hospitals have been the major investors in an increasingly complex and costly medical technology. Hospital care expenditures, traditionally claiming the largest share of the health care dollar, have increased from about 30 percent of total expenditures in 1950 to 40 percent in 1980 (detailed table 68). During the last several years, the expenditure share of hospital care has remained stable, largely as a result of the rapid increases in nursing home care expenditures. In 1950, outlays for nursing home care accounted for 1.5 percent of total health care expenditures; by 1980, they accounted for 8.4 percent.

Expenditures for physician services have exhibited a large increase in absolute dollars. However, they have decreased slightly as a proportion of total health care expenditures—from 22 percent in 1950 to 19 percent in 1980. These expenditures for physician services, however, understate the physician's impact on total health care spending. Physicians are the primary influence regarding decisions on hospitalization—which patients are admitted, what type of care is received, and the length of stay—and resulting costs. Moreover, they have a decided influence on prescription drug expenditures.

As with physician services, expenditures for dentist services have increased substantially in absolute amounts while decreasing slightly as a proportion of total expenditures—from 7.6 percent in 1950 to 6.4 percent in 1980. Other major health expenditures include drugs and drug sundries, administration of health insurance plans, and health related research and construction. In 1980, these categories accounted for 7.8 percent, 4.2 percent, and 4.7 percent, respectively, of all health expenditures (detailed table 68).

Components of Increase

Although numerous and complex factors affect health care expenditures, the three basic components of increase are prices, population, and changes in use and/or services. The level of health care spending is determined by the quantities of various purchased services and the price of each service. Quantities change as a result of changes in the size and characteristics of the population and in utilization patterns. Rapid increases in health care prices, however, have been the primary force behind the enormous growth in aggregate health expenditures. Between 1965 and 1980, price increases accounted for 58 percent of the growth in health care spending. Moreover, between 1979 and 1980, 75 percent of the increase in personal health care expenditures could be attributed to prices (detailed table 61).

Prices

Historically, medical care prices have consistently outpaced the growth of general consumer prices (detailed table 63). Since 1950, the overall Consumer Price Index (CPI) more than tripled, increasing at an average annual rate of 4.2 percent. However, the medical care component of the CPI quintupled, growing at an average annual rate of 5.5 percent.

The Consumer Price Index has been criticized on two counts—for not removing completely the effects on prices of changes in the quality of health services and products and for the items priced not adequately representing the full array of medical treatments and practices. Nevertheless, the medical care component of the CPI is still the most widely used indicator of health care prices.

During the 1970's, increased prices for medical care services, rather than medical care commodities (e.g., drugs and medical supplies), have had the greatest impact on the differential in growth between medical and consumer prices (detailed table 64). The growth in medical care services charges has been particularly rapid for hospital care. For example, between 1979 and 1980, charges for hospital services increased by almost 14 percent and hospital room charges increased by 13 percent. Growth in charges for professional services has also been rapid; between 1979 and 1980, both physician and dental fees increased by about 12 percent.

In spite of the rapid growth in health care prices, the gap between increases in health care and general consumer prices has been narrowing in recent years. In fact, during both 1979 and 1980, the increase in the overall CPI surpassed the increase in the medical care component (detailed table 62). This has been primarily the result of increased inflationary pressures in other sectors of the economy, most notably energy, housing, and food. However, data for the first 6 months of 1981 suggest a reversal of this trend, with the increase in the medical care component surpassing the all items index.

Population

Changes in population size and composition have a direct impact on a nation's expenditures for health care. While population growth was an important factor in health care expenditures during the post-World War II period, it accounted for only 9.0 percent of the increase for the more recent period 1965-80 (detailed table 61).

Currently, it is the changing age distribution, specifically the increasing proportion of people 65 years of age and over, that is having an effect on health expenditures. In 1950, about 8 percent of the population was 65 years of age and over. By 1980, this group represented more than 11 percent of the population, and it is projected to exceed 12 percent by the year 2000.

Health care spending for this group is higher than it is for the younger population. In 1978, per capita personal health care expenditures for people 65 years of age and over were seven times that for people under 19 years of age and two and one-half times that for people 19-64 years of age (detailed table 74). Consequently, the elderly account for 29 percent of total health expenditures, although they comprise only 11 percent of the population.

These differences generally reflect the more serious nature of illness and greater prevalence of chronic conditions among older people. For example, the elderly have more physician visits per person, higher rates of hospitalization, and more days of care in short-stay hospitals than younger people (detailed tables 34 and 42).

Another area of high utilization by the elderly is nursing home care. People 65 years of age and over accounted for 86 percent of those in nursing homes in 1977 (National Center for Health Statistics, 1979). Expenditure increases for nursing home care have been rapid and this growth could be intensified because of the projected growth in the elderly population, even if current use rates remain the same (Fox and Clauser, 1980).

An indication of the increase in nursing home care expenditures that results from the aging of the population can be obtained by using average monthly charge data for specified age groups from the National Nursing Home Survey (National Center for Health Statistics, 1979). Monthly per capita charges are calculated for four population groups: under 65 years of age, 65-74 years of age, 75-84 years of age, and 85 years of age and over. These charges are then applied to the corresponding population by age for the years 1978, 1979, and 1980 and the products summed for each year. The resulting aggregate expenditures reflect the impact of the growing proportion of the elderly population while holding price and utilization constant. The percent change for each year thus represents the increase in these expenditures accounted for by the aging of the population. The indication is that this change in the age distribution accounts for approximately half of the increase in nursing home care expenditures not attributed to rising prices (table B).

Table B. Annual increases in nursing home expenditures, according to contributing factors: United States, 1977-80

Period	Total	Factor		
		Price[1]	Population	Utilization[2]
	Annual percent increase			
1977-78	15.2	7.5	3.0	4.0
1978-79	18.1	9.1	3.2	4.9
1979-80	17.4	9.7	3.3	3.6

[1] National Nursing Home Input Price Index.

[2] Calculated as a residual category.

SOURCES: (National Center for Health Statistics, 1979; U.S. Bureau of the Census, 1980; Health Care Financing Administration, 1980.)

Intensity

Increased consumption of health care accounted for 33 percent of the increase in health care expenditures between 1965 and 1980 (detailed table 61). As discussed earlier, third party payment mechanisms, among other factors, have contributed to the growth in the utilization of health care services. Government programs have removed many of the barriers to access for previously underserved groups, in particular the elderly and the poor. Private health insurance has enhanced the ability of many families to pay for health care. In addition, utilization increases with age and the elderly are a growing proportion of the population.

Physician visits have actually decreased for the population as a whole between 1973 and 1979, however. Rates of hospitalization and the number of nursing home residents have increased, but the increases are not large enough to account for the rise in expenditures resulting from greater health care consumption. Therefore, changes in the complexity and amount of services provided during these physician visits or episodes of institutionalization have accounted for a substantial part of the increase in health care expenditures.

Numerous advances in medical technology have been made during the past few decades and their diffusion has been relatively rapid. The effect has been a substantial change in the health care product because of the increase in the quantity and quality of resources drawn into the health care sector.

These technologies range from the development of new vaccines and laboratory tests to sophisticated treatment processes such as renal dialysis. Each technology presents both costs and benefits that must be weighed before a determination of its net effect on health care expenditures can be made. For example, a new vaccine could decrease costs by preventing disease. On the other hand, the costs of developing and administering the vaccine and the cost of possible adverse effects could override any savings realized.

Some new technologies have benefited the population as a whole (e.g., vaccines and antibiotics) and others, a specific group (e.g., open-heart surgery and renal dialysis). Questions have been raised, however, about the appropriateness and efficacy of many of the new technologies, particularly those that are costly and impact upon only a small proportion of the population. In other words, it has been suggested that some technologies are being overused and the benefits derived from particular treatment processes may not be commensurate with their cost (Russell, 1979).

Summary

Health care expenditures have been rising rapidly in the United States and claiming a larger share of the Nation's resources during the past two decades. The causes for this increase are numerous and complex and include changes in the way health care is financed, the relative growth of various sectors in the health care economy, price inflation, population change, and changes in both the utilization of health care and the health care product.

The growth of third-party payment has led to a more equitable distribution of health care services across the population, but it has also contributed to the increase in health care expenditures. Both private health insurance and government programs have emphasized hospital care, and the growth in expenditures for this care has been responsible for a disproportionate share of the relative growth in total expenditures.

The basic components of the increase in health care expenditures are prices, population, and changes in use and/or services. Price inflation has been the major force in the rapid escalation of health care costs. The growth of the elderly population and attendant higher utilization rates have also contributed to expenditures for health care. Finally, changes in the health care product, arising from advances in medical technology, have also had an impact on the increasing cost of health care.

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Employment-Related Health Insurance

by Amy K. Taylor, Ph.D., National Center for Health Services Research

Introduction

The high cost of private health insurance has attracted much attention recently from consumers and government as well as from private industry and other employers. Much of this health insurance is in the form of group insurance provided through employment-related plans. One study estimated that, in 1975, group health insurance accounted for 83 percent of total health insurance premiums in the United States, and 96 percent of group health insurance was provided through employment and labor unions (Mitchell and Phelps, 1975). Health insurance has become such a significant expense to employers and such a valued fringe benefit to employees that it is often a major issue in collective bargaining agreements.

Government policy concerns also have recently focused attention on the provision of health insurance by employers. Among the reasons for this are that employer contributions to health benefit plans are not taxable as income to the recipients and a tax deduction is allowed for at least part of the premium paid by the employee. Because of the rising costs of this insurance, several bills have been introduced in Congress that would place a ceiling on the amount of employer contributions that can be excluded from the taxable income of employees.

This article examines employment-related health insurance expenditures on the basis of estimates of the number of employees in firms with employment-related health insurance plans and those eligible for such plans; the proportion of payroll expenses going to health insurance; mean insurance premiums; the respective percentages of premiums paid by employers and employees; and the extent to which employers pay the entire premium cost. Comparisons are made by region of the country, by industry, and for selected employer characteristics. Special attention is given to health insurance benefits in firms with large numbers of low-wage workers.

Eligibility

The percent of employees with and without employment-related health insurance plans are shown in table A, in conjunction with the percent of employees eligible for such plans. Overall, 88 percent of employees in the United States worked in firms that offered a health insurance plan. This figure varied considerably, however, depending on the size of the firm and union status of its employees. Those working in small firms (i.e., less than 26 employees) were least likely to have an employment-related health insurance plan; 45 percent of this group, representing approximately nine million people, worked for employers who did not offer any health insurance benefits.

The percent of workers who did not have a health insurance plan at their place of work was lower in larger firms, amounting to only about 1 percent of those in firms with a workforce in excess of 1,000. Similarly, the percent of workers without employment-related insurance was largest in firms without labor union contracts (19 percent versus 3 percent for firms with at least some union affiliation). Although there is a high degree of correlation between size of firm and union status, size appears to have an important independent effect on health insurance benefits. Even within unionized firms, small union firms were less likely to provide health insurance than large union firms. No statistically significant variations existed among different regions of the country.

Where employment-related health insurance was provided, 93 percent of employees were eligible overall,[1] and this number did not vary greatly by employer

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[1] Under existing tax laws regarding employer-provided health insurance, firms are allowed to exclude from eligibility employees under 25 years of age, part-time and seasonal workers, nonresident alien employees, workers with less than 3 years service, and employees covered by an agreement between employee representatives and an employer (Congressional Budget Office, 1980).

Table A. Employee health insurance status, according to selected employer characteristics: United States, 1977

Selected characteristic	Number of employees in thousands	Employee status: In firms without health insurance plans	Employee status: In firms with health insurance plans	Employee status: Eligible in firms with health insurance plans
		Percent of persons		
Total	97,131	11.7	88.3	93.4
Geographic region				
Northeast	20,643	9.1	90.9	93.2
North Central	29,656	11.3	88.7	90.6
South	30,855	12.8	87.2	95.9
West	15,978	13.9	86.1	94.1
Labor union status				
Some union employees	43,498	3.0	97.0	96.1
No union employees	50,909	19.3	80.7	90.6
Unknown	2,725	[1]9.1	90.9	93.5
Size of workforce				
25 or less	20,018	44.6	55.4	97.1
26-250	24,872	7.7	92.3	92.4
251-1,000	13,188	2.2	97.8	89.3
More than 1,000	39,053	0.7	99.3	90.1

[1] Relative standard error equal to or greater than 30 percent.

SOURCE: National Center for Health Services Research: Employer Health Insurance Cost Survey, National Medical Care Expenditure Survey.

characteristics. Workers in the North Central Region and those in firms without union affiliation were least likely to be eligible (91 percent for each); those in very small firms were somewhat more likely to be eligible (97 percent) than those in firms of 251 or more employees.

Employer and Employee Contributions

In 1977, health insurance premiums per eligible employee ranged from slightly more than $500 in the South to more than $600 in the rest of the country, with an overall mean of $591 (table B).[2] While employers paid 80 percent of this on the average, both premium amounts and the portion paid for by the employer varied by employer characteristics. The highest share of premiums was borne by the employer in large firms (84 percent), in at least partly unionized firms (87 percent versus 73 percent for nonunion firms), and in firms located in other than the South Region of the country (more than 82 percent, compared with 72 percent in the South).

Total insurance premiums in such firms were relatively high. For example, in firms with some union affiliation, the mean premium per employee was $691, compared with $488 in firms without union status. As a result, total employer contributions for health insurance tended to be relatively large in these cases. However, small firms with fewer than 26 employees also paid relatively high premiums for employment-related insurance plans.

Variations in employer contributions to health insurance premiums reflect the pattern of total premiums. Employee contributions, with a mean of $89, varied between at least partly unionized and nonunionized firms ($68 and $111, respectively); between the South and the Northeast and West (roughly $108 versus $74); and between firms of 26 to 250 employees and both smaller and larger firms (ranging from $75 to $112).

The extent of outlays for employment-related health insurance plans is also reflected in the premium/payroll ratio. On the average, health insurance costs were approximately 5 percent of payroll expenses, and variations by location and firm characteristics were small, although the premium/payroll ratio in unionized firms was somewhat higher than elsewhere.

In addition to eligibility, premium amounts, and respective employer/employee contributions, a measure of interest is the distribution of eligible employees according to whether their employers paid all, some, or no portion of health insurance premiums. Again, considerable variations by employer characteristics existed.

For almost one-third of all employees in firms with health insurance plans, the employer paid 100 percent of the premium (table C). Firms with at least some union affiliation were more likely to pay the full premium than others. Also, almost half of employees of very small firms (less than 26 employees) had their health insurance

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[2] Further information is needed in order to interpret these differences in premium amounts since data were not available on depth and breadth of insurance coverage.

Table B. Premium payments, employer and employee contributions, and premium/payroll ratios for employment-related health insurance plans, according to selected employer characteristics: United States, 1977

Selected characteristic	Premium payments				Mean premium/ payroll ratio
	Total annual amount	Employer contribution	Employee contribution	Percent paid by employer	
	Mean per eligible employee				
Total	$590.50	$501.70	$88.80	80.4	0.046
Geographic region					
Northeast	633.70	559.50	74.20	86.6	0.048
North Central	645.80	558.30	87.50	83.1	0.047
South	501.40	393.60	107.80	72.2	0.044
West	601.10	527.10	74.00	82.8	0.045
Labor union status					
Some union employees	690.80	623.20	67.50	87.4	0.050
No union employees	487.70	376.50	111.20	73.1	0.043
Unknown	599.10	520.70	78.40	83.0	0.048
Size of workforce					
25 or less	594.80	517.10	77.70	79.9	0.050
26-250	528.70	416.30	112.30	75.7	0.044
251-1,000	586.90	489.50	97.40	79.1	0.048
More than 1,000	627.30	552.10	75.20	83.8	0.050

SOURCE: National Center for Health Services Research: Employer Health Insurance Cost Survey, National Medical Care Expenditure Survey.

Table C. Percent distribution of employees in firms with health insurance plans, according to level of employer contribution and selected employer characteristics: United States, 1977

Selected characteristic	Mean annual premium per eligible employee	Level of contribution			
		Total	Employer pays entire premium	Employer pays some share of premium	Employer pays no share of premium
		Percent distribution of employees			
Total	$590.50	100.0	31.4	66.4	2.2
Geographic region					
Northeast	633.70	100.0	41.8	56.4	[1]1.7
North Central	645.80	100.0	34.4	64.9	0.7
South	501.40	100.0	22.5	73.3	4.2
West	601.10	100.0	29.3	69.3	[1]1.4
Labor union status					
Some union employees	690.80	100.0	35.6	63.5	[1]0.8
No union employees	487.70	100.0	26.9	69.5	3.6
Unknown	599.10	100.0	35.5	63.3	[1]1.1
Size of workforce					
25 or less	594.80	100.0	49.4	45.3	5.4
26-250	528.70	100.0	34.7	61.3	4.0
251-1,000	586.90	100.0	32.2	66.9	0.9
More than 1,000	627.30	100.0	24.1	75.4	0.5

[1] Relative standard error equal to or greater than 30 percent.

SOURCE: National Center for Health Services Research: Employer Health Insurance Cost Survey, National Medical Care Expenditure Survey.

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premiums paid entirely by their employers, while only a quarter of those in the largest firms had. The latter type of employer, however, was most likely to make at least some contribution to insurance premiums. Overall, only 2 percent of employees eligible for health insurance plans worked for employers who contributed nothing to the premium, although this percentage was higher in nonunionized firms, in those with 250 or less employees, and in the South.

Insurance Coverage by Industry

Considerable variation in the availability of employment-related health insurance, mean insurance premiums, and employer contributions also existed for different industries. Table D shows the percent of employees in firms without plans, mean annual premiums, and employer contributions by industry.

Compared with employees in other industries, a higher proportion of agricultural workers (34 percent) worked for firms that offered no health insurance. Workers in the construction industry also had a high percentage of employees in firms without health plans (23 percent), compared with the overall average of 12 percent. Those industries where the smallest percent of employees worked in firms without plans were public administration and transportation.

For firms with plans, total health insurance premiums were highest in the manufacturing, transportation, and mining industries with premiums of around $680. At the other end of the scale, workers in the wholesale and retail trade and service industries received health benefits with average premiums not much greater than $500.

A comparison of employer contributions to workers' health insurance plans shows a pattern similar, though not identical, to that for total average premiums. More specifically, the percentage of the total premium paid for by employers was highest in the mining, transportation, and manufacturing industries (ranging from 86 to 93 percent). Since these three industries also have the highest total premiums, the dollar contributions toward health insurance by employers are also the largest of all industries. In contrast, the lowest employer contributions were found in the military,[3] wholesale and retail trade, and service industries.

Distribution of Insurance Premiums

The implications of proposed changes in the current tax treatment of employment-related health insurance can be better understood by examining the frequency distribution of total annual premiums and their components—employer and employee contributions. For example, several current proposals would impose limits at various levels on tax-free employer contributions to health insurance for their employees. The number of workers that would be affected by such policies can be seen in table E, which shows the percent of employees in each of several premium brackets and respective employer and employee contributions to these premiums.[4] More than half (54 percent) of all

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[3] The direct provision of health care to military members is not classified as a health insurance benefit.

[4] Because these distributions are based on firm averages rather than individual premiums, these figures may underestimate the actual number of workers who would be affected by a law imposing a ceiling on tax-free employer contributions to health insurance plans.

Table D. Percent of employees in firms without health insurance plans, and premiums and employer contributions in firms with plans, according to industry: United States, 1977

Industry	Number of employees in thousands	Percent of employees in firms without health insurance plans	Firms with health insurance plans: Mean annual premium per eligible employee	Firms with health insurance plans: Mean employer contribution per eligible employee	Firms with health insurance plans: Percent of premium paid by employer
Total[1]	97,131	11.7	$590.50	$501.70	80.4
Agriculture	1,062	33.7	547.50	451.30	81.5
Mining	1,119	17.9	676.00	630.60	92.7
Construction	3,799	22.9	555.80	495.80	82.1
Manufacturing	18,887	4.1	687.50	628.20	86.1
Transportation, communication, and public utilities	10,079	2.3	678.60	610.00	88.4
Wholesale and retail trade	17,594	19.6	521.20	434.20	79.0
Finance, insurance, and real estate	5,272	10.3	542.50	450.90	80.9
Service and miscellaneous[2]	20,210	16.5	526.50	429.20	77.4
Public administration	4,203	1.6	601.90	522.00	81.8
Military	1,357	3.0	541.70	421.06	79.0
Unknown	14,770	10.6	583.30	490.60	81.5

[1] The sum of the components may not add to total because of rounding.

[2] Includes business repair services, personal services, entertainment and recreation, and professional services.

SOURCE: National Center for Health Services Research: Employer Health Insurance Cost Survey, National Medical Care Expenditure Survey.

Table E. Percent distribution of employees by average annual health insurance premium, according to total amount paid and employer and employee contributions: United States, 1977

Average annual premium	Amount paid		
	Total premium	Employer contribution	Employee contribution
	Percent distribution of employees		
Total	100.0	100.0	100.0
$0	11.6	13.3	40.4
$1-250	13.3	22.7	53.8
$251-500	29.2	27.8	4.7
$501-750	24.2	19.3	0.4
$751-1,000	11.0	7.8	[2]0.4
$1,001-1,250	4.7	4.4	(3)
$1,251-1,500	2.6	2.2	(3)
$1,501-1,750	1.3	0.7	(3)
$1,751-2,000	1.1	1.2	(3)
$2,000 or more	0.9	[2]0.6	(3)

[1] Total premiums per firm divided by the number of eligible employees.
[2] Relative standard error equal to or greater than 30 percent.
[3] The sample cell was not large enough to estimate the population figure.

NOTE: The total number of employees for 1977 was 97,131,000.

SOURCE: National Center for Health Services Research: Employer Health Insurance Cost Survey, National Medical Care Expenditure Survey.

employees worked in firms where the average annual premium in 1977 was $500 or less. In only 11 percent of the cases were premiums in excess of $1,000. Employee contributions to premiums were $250 or less in 94 percent of the cases. Employer contributions exceeded $250 for 64 percent and $500 for roughly one-third of all employees.

Insurance Coverage of Low-Wage Workers

In view of various national health insurance proposals that contained provisions for employer-mandated health insurance, another point of interest is the extent of employment-related insurance coverage for low-wage workers. Of those in firms where more than half of the workforce was at or near the minimum wage in 1977, about 31 percent worked for employers who did not provide health insurance plans (table F). This was substantially above the percentage for employers with fewer low-wage employees and almost three times the national average of 12 percent of all employees.

Table F. Selected aspects of employment-related health insurance benefits, according to the percent of low-wage employees per employer: United States, 1977

Selected aspect	Total[1]	Low-wage employees			
		None	25 percent or less	More than 25-50 percent	More than 50 percent
		Number in thousands			
All employees	97,131	38,194	27,830	9,429	14,228
		Percent of employees			
Eligible for health insurance plans	93.4	97.1	94.8	90.8	77.7
In firms without health insurance plans	11.7	11.5	2.5	16.6	30.7
In firms with health insurance plans	88.3	88.5	97.5	83.4	69.3
Employer pays entire premium	31.4	43.2	22.6	26.8	29.3
Employer pays some share of premium	66.4	55.0	76.4	71.9	66.0
Employer pays none of premium	[2]2.2	[2]1.9	[2]1.0	1.3	[2]4.7
		Mean amount per eligible employee			
Total annual premium	$590.50	$707.10	$600.30	$442.80	$385.00
Employer contribution	501.70	627.10	505.60	336.90	300.60
Employee contribution	88.80	80.00	94.60	105.90	84.40
		Percent of premium			
Employer contribution	80.4	85.8	81.5	72.1	72.2
		Mean per eligible employee			
Premium/payroll ratio	0.046	0.051	0.048	0.042	0.036

[1] The sum of the components may not add to total because of missing data.
[2] Relative standard error equal to or greater than 30 percent.

NOTE: Low-wage employees were those earning either less than or up to $0.50 more than the 1977 minimum wage ($2.65 per hour).

SOURCE: National Center for Health Services Research: Employer Health Insurance Cost Survey, National Medical Care Expenditure Survey.

Further, those in firms with a large low-wage workforce were least likely to be eligible for employment-related health insurance plans. Only 78 percent of employees in firms with more than half of the workforce at or near the minimum wage were eligible, compared with more than 90 percent in other firms.

Total annual premiums and the respective shares paid by employers and employees appeared to vary with respect to the percent of low-wage workers as well. In firms with no one at or near the minimum wage, the mean premium per eligible employee was $707. In firms where more than half of the workforce consisted of low-wage employees, it was $385. Also, where the proportion of low-wage employees exceeded 25 percent of the workforce, employers paid less than three-quarters of total premium costs, compared with four-fifths for other employers. Mean employee contributions to health insurance premiums were correspondingly high, despite comparatively low total premiums. As a result, the premium/payroll ratios of low-wage employers were small owing to the low level of insurance premiums.

Summary

This article has examined several aspects of employment-related health insurance. Major variations exist in premium levels and employer contributions by size of the workforce, union status, and the percentage of low-wage employees on the payroll. Health insurance benefits are more frequently found in firms with at least some union affiliation. Where health insurance is provided, mean premiums are higher and a larger percentage of premiums is paid by the employer in firms with at least some unionization. Employees of small firms are less likely to have employment-related health insurance benfits than those of large firms. However, when smaller firms provide health insurance plans, the premiums are similar to those in the plans of large firms; the same applies to employer contributions, particularly in the case of firms with less than 26 employees.

Regional differences in the provision of health insurance are few, except that lower mean insurance premiums and employer contributions are found in the South than in the rest of the country.

Variations also exist among health insurance benefits provided to employees in different industries. Workers in agriculture and construction are least likely to have employment-related health insurance plans, while those in public administration and transportation are most likely. For firms with plans, total premiums and employer contributions are the highest for manufacturing, transportation, and mining, and lowest for the military, wholesale and retail trade, and service industries.

Those employed by firms with more than half of the workforce at or near the minimum wage are least likely to have access to employment-related health insurance, both in terms of availability of health insurance plans and eligibility to participate in them.

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PART B

Data on the Nation's Health

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Detailed Tables

Health Status and Determinants

Fertility

1. Live births, crude birth rates, and birth rates by age of mother, according to race: United States, selected years 1950-78 99
2. Birth rates for women 15-44 years of age, according to live-birth order and race: United States, selected years 1950-78 100
3. Completed fertility rates and parity distribution for women 50-54 years of age at the beginning of selected years 1925-79, according to race and birth cohort: United States, selected birth cohorts 1871-1929 101
4. Selected measures of teenage fertility, according to age and race: United States, 1968-78 102
5. Legal abortions, according to selected patient characteristics, type of procedure, and location of facility: United States, 1973-78 103
6. Legal abortions, abortion-related deaths and death rates, and relative risk of death, according to period of gestation: United States, 1973-75 and 1976-78 104
7. Ever-married women 15-44 years of age, according to contraceptive status, method of contraception used, race, and age: United States, 1973 and 1976 105

Mortality

8. Death rates for all causes, according to race, sex, and age: United States, selected years 1950-78 107
9. Life expectancy at birth and at 65 years of age, according to race and sex: United States, selected years 1900-1978 111
10. Infant, late fetal, and perinatal mortality rates, according to race: United States, selected years 1950-78 .. 112
11. Infant mortality rates, according to race, geographic division, and State: United States, average annual 1966-68, 1971-73, and 1976-78 113
12. Infant mortality rates and perinatal mortality ratios: Selected countries, 1973 and 1978 115
13. Life expectancy at birth, according to sex: Selected countries, 1973 and 1978 116
14. Age-adjusted death rates for selected causes of death, according to race and sex: United States, selected years 1950-78 117
15. Death rates for diseases of the heart, according to race, sex, and age: United States, selected years 1950-78 120
16. Death rates for ischemic heart disease, according to race, sex, and age: United States, selected years 1968-78 124
17. Death rates for malignant neoplasms, according to race, sex, and age: United States, selected years 1950-78 128
18. Death rates for cancer of the respitatory system, according to race, sex, and age: United States, selected years 1950-78 132

19. Death rates for cerebrovascular disease, according to race, sex, and age: United States, selected years 1960-78 135
20. Death rates for motor vehicle accidents, according to race, sex, and age: United States, selected years 1960-78 137
21. Death rates for homicide, according to race, sex, and age: United States, selected years 1960-78 139
22. Death rates for suicide, according to race, sex, and age: United States, selected years 1960-78 141

Determinants and Measures of Health

23. Infants weighing 2,500 grams or less at birth, according to race, geographic division, and State: United States, average annual 1966-68, 1971-73, and 1976-78 143
24. Live births, according to race and selected characteristics: United States, 1970-78 145
25. Vaccination status of children 1-4 years of age, according to race and standard metropolitan statistical area (SMSA) component: United States, 1974 and 1979 146
26. Selected notifiable desease rates, according to disease: United States, selected years 1950-79 147
27. Self-assessment of health and limitation of activity, according to selected characteristics: United States, 1974 and 1979 148
28. Restricted-activity and bed-disability days, according to selected characteristics: United States, 1974 and 1979 149
29. Disability days associated with acute conditions and incidence of acute conditions, according to age: United States, 1970-79 150
30. Cigarette smoking status of persons 20 years of age and over, according to sex, race, and age: United States, 1965, 1976, and 1980 151
31. Cigarettes smoked per day by persons 20 years of age and over, according to sex, race, and age: United States, 1965, 1976, and 1980 153
32. Teenage cigarette smoking, according to smoking status, sex, and age: United States, 1968, 1974, and 1979 155
33. Air pollution, according to source and type of pollutant: United States, selected years 1970-79 156

Utilization of Health Resources

Ambulatory Care

34. Physician visits, according to source or place of care and selected patient characteristics: United States, 1974 and 1979 157
35. Interval since last physician visit, according to selected patient characteristics: United States, 1974 and 1979 158
36. Office visits to physicians, according to pysician specialty and selected patient characteristics: United States, 1974 and 1979 159
37. Office visits to physicians, according to selected characteristics: United States, 1974 and 1979 160
38. Dental visits and interval since last visit, according to selected patient characteristics: United States, 1974 and 1979 161

Inpatient Care

39. Discharges from and days of care in short-stay hospitals, according to type of hospital and ownership: United States, 1974 and 1979 162
40. Discharges from and days of care in non-Federal short-stay hospitals, according to sex, age, selected first-listed diagnosis, and ICDA code: United States, 1974 and 1979 163

41. Discharges from and days of care in non-Federal short-stay hospitals for all patients and for patients with surgery, according to bed size of hospital and age of patient: United States, 1974 and 1979 166

42. Discharges from and days of care in short-stay hospitals, according to selected characteristics: United States, 1974 and 1979 168

43. Operations for inpatients discharged from non-Federal short-stay hospitals, according to sex, age, leading surgical category, and ICDA code: United States, 1974 and 1979 169

44. Nursing home residents, according to selected functional status and age: United States, 1973-74 and 1977 172

45. Nursing home and personal care home residents 65 years of age and over and number per 1,000 population, according to sex and race: United States, 1963, 1969, 1973-74, and 1977 174

46. Additions to mental health facilities and percent change, according to service setting and type of facility: United States, 1971 and 1977 175

Health Care Resources

Manpower

47. Persons employed in the health service industry, according to place of employment: United States, 1970-80 176

48. Professionally active physicians (M.D.'s and D.O.'s), according to type of physician, and number per 10,000 population: United States and outlying U.S. areas, selected 1950-80 estimates and 1985, 1990, and 2000 projections 177

49. Physicians (M.D.'s), according to activity: United States, selected years 1970-79............ 178

50. Professionally active physicians (M.D.'s), according to primary specialty: United States, selected years 1970-79 179

51. Active non-Federal physicians (M.D.'s) per 10,000 civillian population, according to geographic region, primary specialty, and activity: United States, 1974 and 1979 180

52. Graduates of health professions schools and number of schools, according to profession: United States, selected 1950-79 estimates and 1980, 1990, and 2000 projections 182

Facilities

53. Short-stay hospitals and beds, according to type of hospital and ownership: United States, 1974 and 1979 183

54. Community hospitals beds per 1,000 population and average annual rate of change, according to geographic division and State: United States, selected years 1940-79 184

55. Occupacy rate in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1940-79 186

56. Full-time equivalent employees per 100 average daily patients in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1960-79 188

57. Outpatient visits per 1,000 patient days in community hopitals and average annual rate of change, according to geographic division and State: United States, selected years 1970-79............ 190

58. Long-stay hospitals and beds, according to type of hospital and ownership: United States, 1974 and 1979 192

59. Nursing homes, beds, and bed rate, according to geographic division and State: United States, 1973 and 1978............ 193

Health Care Expenditures

National Health Expenditures

60. Gross national product and national health expenditures: United States, selected years 1929-80 195

61. Personal health care expenditures, average annual percent change, and percent distribution of factors affecting growth: United States, 1965-80 196

62. Consumer Price Index (1967 = 100) and average annual percent change for all items and selected items: United States, selected years 1950-80 197

63. Consumer Price Index (1967 = 100) for all items and medical care components: United States, selected years 1950-80 198

64. Consumer Price Index (1967 = 100) average annual percent change for all items and medical care components: United States, selected years 1950-80 199

Sources and Types of Payment

65. National health expenditures, according to source of funds: United States, selected years 1929-80 200

66. National health expenditures average annual percent change, according to source of funds: United States, selected years 1929-80 201

67. Personal health care expenditures and percent distribution, according to source of payment: United States, selcted years 1929-80 202

68. National health expenditures and percent distribution, according to type of expenditure: United States, selected years 1950-80 203

69. National health expenditures average annual percent change, according to type of expenditure: United States, selected years 1950-80 204

Institutional Care

70. Hospital expenses per inpatient day, personnel and number per 100 patients, and average annual percent change: United States, 1971-79 205

71. Average annual percent increases in hospital inpatient expenses per patient day, according to contributing factors: United States, selected years 1960-79 206

72. Nursing home average monthly charges and percent distribution of residents, according to primary source of payments and selected facility characteristics: United States, 1973-74 and 1977 207

73. Monthly charge for care in nursing homes and percent distribution of residents, according to selected facility and resident characteristics: United States, 1964, 1973-74, and 1977 209

Major Population Dimensions

74. Personal health care per capita expenditures, according to age, source of payment, and type of expenditure: United States, selected years 1965-78 210

75. Medicare expenditures and percent distribution, according to type of service: United States, selected years 1967-80 212

76. Medicaid expenditures and percent distribution, according to type of service: United States, selected years 1967-80 213

77. Veterans' medical care expenditures and percent distribution, according to type of expenditure: United States, selected fiscal years 1965-80 214

Research and Development

78. National funding for health research and development and average annual percent change, according to source of funds: United States, selected years 1960-80 215

79. Federal obligations for health research and development and percent distribution, according to agency: United States, fiscal years 1970-80 216

Table 1. Live births, crude birth rates, and birth rates by age of mother, according to race: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race and year	Live births	Crude birth rate[1]	Age							
			10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
Total			Live births per 1,000 women							
1950	3,632,000	24.1	1.0	81.6	196.6	166.1	103.7	52.9	15.1	1.2
1955	4,097,000	25.0	0.9	90.3	241.6	190.2	116.0	58.6	16.1	1.0
1960	4,257,850	23.7	0.8	89.1	258.1	197.4	112.7	56.2	15.5	0.9
1965	3,760,358	19.4	0.8	70.5	195.3	161.6	94.4	46.2	12.8	0.8
1970	3,731,386	18.4	1.2	68.3	167.8	145.1	73.3	31.7	8.1	0.5
1975	3,144,198	14.8	1.3	56.3	114.7	110.3	53.1	19.4	4.6	0.3
1977	3,326,632	15.4	1.2	53.7	115.2	114.2	57.5	19.2	4.2	0.2
1978	3,333,279	15.3	1.2	52.4	112.3	112.0	59.1	18.9	3.9	0.2
White										
1950	3,108,000	23.0	0.4	70.0	190.4	165.1	102.6	51.4	14.5	1.0
1955	3,485,000	23.8	0.3	79.1	235.8	186.6	114.0	56.7	15.4	0.9
1960	3,600,744	22.7	0.4	79.4	252.8	194.9	109.6	54.0	14.7	0.8
1965	3,123,860	18.3	0.3	60.6	189.0	158.4	91.6	44.0	12.0	0.7
1970	3,091,264	17.4	0.5	57.4	163.4	145.9	71.9	30.0	7.5	0.4
1975	2,551,996	13.8	0.6	46.8	109.7	110.0	52.1	18.1	4.1	0.2
1977	2,691,070	14.4	0.6	44.6	109.8	113.8	56.3	17.8	3.8	0.2
1978	2,681,116	14.2	0.6	43.6	106.3	111.1	57.9	17.6	3.5	0.2
All other										
1950	524,000	33.3	5.1	163.5	242.6	173.8	112.6	64.3	21.2	2.6
1955	613,000	34.5	4.8	167.2	281.6	218.2	132.6	74.9	22.0	2.1
1960	657,106	32.1	4.0	158.2	294.2	214.6	135.6	74.2	22.0	1.7
1965	636,498	27.6	4.0	138.4	239.2	183.5	113.0	62.7	19.3	1.5
1970	640,122	25.1	4.8	133.4	196.8	140.1	82.5	42.2	12.6	0.9
1975	592,202	21.2	4.7	108.6	143.5	112.1	59.7	27.6	7.6	0.5
1977	635,562	21.9	4.3	102.4	145.7	116.5	64.8	27.5	6.9	0.5
1978	652,163	22.1	4.1	99.1	145.7	117.3	66.7	27.0	6.5	0.4
Black:										
1960	602,264	31.9	4.3	156.1	295.4	218.6	137.1	73.9	21.9	1.1
1965	581,126	27.5	4.3	144.6	243.1	180.4	111.3	61.9	18.7	1.4
1970	572,362	25.3	5.2	147.7	202.7	136.3	79.6	41.9	12.5	1.0
1975	511,581	20.9	5.1	113.8	145.1	105.4	54.1	25.4	7.5	0.5
1977	544,221	21.7	4.7	107.3	147.7	111.1	58.8	25.1	6.6	0.5
1978	551,540	21.6	4.4	103.7	147.5	110.6	59.6	24.0	6.0	0.4

[1] Live births per 1,000 population.

NOTE: Data are based on births adjusted for underregistration for 1950 and 1955 and on registered births for all other years. Figures for 1960, 1965, and 1970 are based on a 50-percent sample of births; for 1975-78, they are based on 100 percent of births in selected States and on a 50-percent sample of births in all other States. Beginning in 1970, births to nonresidents of the United States are excluded.

SOURCE: National Center for Health Statistics: Vital Statistics of the United States, 1978, Vol. 1. Public Health Service, DHHS, Hyattsville, Md. To be published.

Table 2. Birth rates for women 15-44 years of age, according to live-birth order and race: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race and year	Total	Live-birth order				
		1	2	3	4	5 or higher
Total[1]	Live births per 1,000 women 15-44 years of age					
1950	106.2	33.3	32.1	18.4	9.2	13.2
1955	118.3	32.8	31.8	23.1	13.3	17.3
1960	118.0	31.1	29.2	22.8	14.6	20.3
1965	96.6	29.8	23.4	16.6	10.7	16.1
1970	87.9	34.2	24.2	13.6	7.2	8.7
1975	66.7	28.4	21.2	9.5	3.9	3.7
1977	67.8	28.6	21.9	10.1	3.9	3.3
1978	66.6	28.3	21.4	10.0	3.8	3.1
White						
1950	102.3	33.3	32.3	17.9	8.4	10.4
1955	113.7	32.6	32.0	22.9	12.6	13.6
1960	113.2	30.8	29.2	22.7	14.1	16.4
1965	91.4	28.9	23.0	16.2	10.2	13.1
1970	84.1	32.9	23.7	13.3	6.8	7.4
1975	63.0	26.9	20.5	8.9	3.6	3.1
1977	64.0	27.3	21.1	9.5	3.5	2.6
1978	62.7	27.0	20.5	9.3	3.4	2.5
Black						
1960	153.5	33.6	29.3	24.0	18.6	48.0
1965	133.9	35.7	26.2	19.4	14.6	38.0
1970	115.4	43.3	27.1	16.1	10.0	18.9
1975	89.2	37.4	24.6	12.8	6.3	8.1
1977	89.8	36.3	26.0	13.9	6.5	7.0
1978	88.6	35.3	25.9	14.2	6.7	6.6

[1] Includes all other races not shown separately.

NOTE: Beginning in 1970, births to nonresidents of the United States are excluded.

SOURCE: National Center for Health Statistics: Vital Statistics of the United States, 1978, Vol. 1. Public Health Service, DHHS, Hyattsville, Md. To be published.

Table 3. Completed fertility rates and parity distribution for women 50-54 years of age at the beginning of selected years 1925-79, according to race and birth cohort: United States, selected birth cohorts 1871-1929

(Data are based on the national vital registration system)

Race and birth cohort	Age 50-54 as of January 1	Completed fertility rate[1]	Total	Parity (number of children born alive)							
				0	1	2	3	4	5	6	7 or more
				Distribution of women[2]							
Total											
1871-75	1925	3,773.5	1,000.0	207.2	112.8	124.2	110.0	93.6	75.1	66.4	210.7
1876-80	1930	3,531.9	1,000.0	216.8	123.2	132.0	114.0	93.0	72.0	64.5	184.5
1881-85	1935	3,321.6	1,000.0	217.4	134.6	142.5	119.3	95.0	72.0	57.9	161.3
1886-90	1940	3,136.8	1,000.0	210.4	148.5	153.2	129.7	99.5	68.0	55.4	135.3
1891-95	1945	2,932.6	1,000.0	192.7	172.0	177.2	139.3	97.8	61.5	48.3	111.2
1896-1900	1950	2,675.9	1,000.0	194.6	200.7	195.2	136.6	87.8	53.5	41.5	90.1
1901-05	1955	2,441.4	1,000.0	201.9	227.6	206.2	129.3	80.4	48.6	34.7	71.3
1906-10	1960	2,285.8	1,000.0	215.6	225.1	218.7	131.4	77.5	44.6	29.2	57.9
1911-15	1965	2,354.3	1,000.0	190.1	208.6	238.1	149.8	85.2	46.3	28.8	53.1
1916-20	1970	2,574.0	1,000.0	149.0	179.0	251.7	174.6	102.8	55.8	32.0	55.1
1921-25	1975	2,856.9	1,000.0	108.5	152.1	248.7	197.0	123.5	68.0	39.5	62.7
1925-29	1979	3,041.1	1,000.0	104.9	121.1	231.6	207.5	139.5	79.2	45.8	70.4
White											
1871-75	1925	3,663.6	1,000.0	209.7	112.1	127.9	112.9	95.5	77.2	66.7	198.0
1876-80	1930	3,444.4	1,000.0	218.2	121.9	136.1	116.9	94.8	74.0	64.2	173.9
1881-85	1935	3,253.8	1,000.0	217.6	132.2	147.9	122.4	96.0	74.2	57.8	151.9
1886-90	1940	3,092.9	1,000.0	209.1	144.3	160.3	132.4	100.2	70.3	54.8	128.6
1891-95	1945	2,890.4	1,000.0	191.7	167.5	184.6	141.4	98.0	64.2	47.8	104.8
1896-1900	1950	2,631.5	1,000.0	193.1	192.1	205.9	141.4	89.0	55.2	41.1	82.2
1901-05	1955	2,399.0	1,000.0	197.9	219.5	218.3	135.8	82.3	49.4	33.7	63.1
1906-10	1960	2,248.9	1,000.0	207.9	218.0	233.2	138.8	79.6	44.7	28.0	49.8
1911-15	1965	2,313.5	1,000.0	177.4	204.9	254.1	158.9	88.0	46.1	27.4	43.2
1916-20	1970	2,526.7	1,000.0	134.6	175.9	268.7	185.1	106.5	55.3	30.3	43.6
1921-25	1975	2,793.7	1,000.0	94.2	150.6	264.6	208.8	127.9	67.9	36.9	49.1
1925-29	1979	2,951.1	1,000.0	93.4	121.3	245.4	220.1	144.3	78.5	43.1	53.9
All other											
1871-75	1925	4,770.8	1,000.0	185.7	118.2	93.6	82.0	76.4	56.1	65.3	322.7
1876-80	1930	4,254.7	1,000.0	207.7	134.0	99.5	87.4	79.9	54.7	64.8	272.0
1881-85	1935	3,865.0	1,000.0	223.1	151.5	99.8	96.5	85.3	41.5	64.1	238.2
1886-90	1940	3,451.4	1,000.0	231.9	175.9	105.9	96.6	93.3	52.4	58.0	186.0
1891-95	1945	3,212.5	1,000.0	222.3	206.7	112.4	114.5	92.6	40.4	48.4	162.7
1896-1900	1950	2,967.7	1,000.0	227.4	255.0	114.1	97.5	74.3	38.8	42.6	150.3
1901-05	1955	2,706.7	1,000.0	250.4	275.9	117.8	81.0	62.3	43.0	39.1	130.5
1906-10	1960	2,529.1	1,000.0	287.5	266.6	114.5	73.2	60.1	43.5	35.6	119.0
1911-15	1965	2,641.2	1,000.0	296.1	232.4	116.3	78.3	64.1	46.1	38.9	127.8
1916-20	1970	2,924.2	1,000.0	266.2	202.0	120.9	91.2	72.5	57.8	44.9	144.5
1921-25	1975	3,315.9	1,000.0	217.7	163.5	131.7	108.2	89.0	68.7	56.4	164.8
1925-29	1979	3,666.7	1,000.0	188.9	120.9	132.0	118.7	103.8	83.0	66.7	186.0

[1] Number of children born alive to each 1,000 women who have completed their reproductive histories (women 50-54 years of age).

[2] Proportional distribution of each 1,000 women in the cohort by the number of children born alive to them.

NOTE: Example of use of table—For every 1,000 women 50-54 years of age in 1979, an average of 3,041.1 children were born alive (about 3 children per woman). About 10 percent of the women in this cohort reached 50-54 years of age having had no children, about 12 percent had 1 child, and about 12 percent had 6 children or more.

SOURCES: National Center for Health Statistics: Fertility Tables for Birth Cohorts by Color, United States, 1917-73 by R. Heuser. DHEW Pub. No. (HRA) 76-1152. Health Resources Administration. Washington. U.S. Government Printing Office, Apr. 1976; Data computed from Vital Statistics of the United States, 1978, Vol. 1. Public Health Service, DHHS, Hyattsville, Md. To be published.

Table 4. Selected measures of teenage fertility, according to age and race: United States, 1968-78

(Data are based on the national vital registration system)

Race and year	Age									
	10-14 years	15-17 years	18-19 years	10-14 years	15-17 years	18-19 years	15-17 years	18-19 years	15-17 years	18-19 years
Total[1]	Live births per 1,000 women			Percent of all live births			Live births to unmarried women per 1,000 unmarried women		Live births to unmarried women per 1,000 total live births	
1968	1.0	35.1	113.5	0.3	5.5	11.4	14.7	30.0	403.7	201.3
1969	1.0	35.7	112.4	0.3	5.6	11.2	15.2	31.5	412.8	210.7
1970	1.2	38.8	114.7	0.3	6.0	11.3	17.1	32.9	429.8	223.9
1971	1.1	38.3	105.6	0.3	6.4	11.3	17.6	31.7	445.4	232.0
1972	1.2	39.2	97.3	0.4	7.3	11.7	18.6	31.0	458.5	246.8
1973	1.3	38.9	91.8	0.4	7.6	11.7	18.9	30.6	466.9	255.7
1974	1.2	37.7	89.3	0.4	7.4	11.4	19.0	31.4	482.5	270.4
1975	1.3	36.6	85.7	0.4	7.2	11.3	19.5	32.8	513.9	298.1
1976	1.2	34.6	81.3	0.4	6.8	10.8	19.3	32.5	540.2	316.1
1977	1.2	34.5	81.9	0.3	6.4	10.4	20.1	35.0	565.5	343.7
1978	1.2	32.9	81.0	0.3	6.1	10.2	19.5	35.7	574.9	361.6
White										
1968	0.4	25.6	100.5	0.1	4.2	10.5	6.2	16.8	234.4	127.4
1969	0.4	26.4	99.2	0.1	4.3	10.2	6.6	17.0	240.3	129.0
1970	0.5	29.2	101.5	0.1	4.6	10.4	7.5	17.6	252.0	135.0
1971	0.5	28.6	92.4	0.1	4.9	10.4	7.4	15.9	251.7	131.7
1972	0.5	29.4	84.5	0.2	5.7	10.7	8.7	15.1	264.4	136.7
1973	0.6	29.5	79.6	0.2	6.0	10.6	8.5	15.0	276.4	142.6
1974	0.6	29.0	77.7	0.2	5.9	10.4	8.9	15.4	294.2	150.1
1975	0.6	28.3	74.4	0.2	5.8	10.3	9.7	16.6	329.6	171.9
1976	0.6	26.7	70.7	0.2	5.4	9.9	9.9	17.0	357.4	187.9
1977	0.6	26.5	71.1	0.2	5.1	9.4	10.7	18.8	389.2	209.5
1978	0.6	25.4	70.1	0.2	4.9	9.3	10.5	19.5	400.9	224.4
Black										
1968	4.7	98.2	206.1	1.2	13.1	16.6	—	—	—	—
1969	4.8	96.9	202.5	1.2	13.1	16.7	72.3	129.1	720.9	482.9
1970	5.2	101.4	204.9	1.3	13.4	16.6	77.9	136.4	759.6	521.4
1971	5.1	99.7	193.8	1.3	14.0	16.4	80.9	136.3	796.3	560.3
1972	5.1	99.9	181.7	1.4	15.5	17.0	82.9	129.8	810.1	590.2
1973	5.4	96.8	169.5	1.5	15.8	17.1	81.9	123.0	825.6	603.8
1974	5.0	91.0	162.0	1.4	15.4	17.1	79.4	124.9	848.0	638.3
1975	5.1	86.6	156.0	1.4	14.6	16.8	77.7	126.8	874.0	676.0
1976	4.7	81.5	146.8	1.3	13.9	16.0	74.6	121.6	897.4	709.0
1977	4.7	81.2	147.6	1.2	13.1	15.4	74.3	125.9	904.7	746.4
1978	4.4	76.6	145.0	1.1	12.2	15.2	70.3	124.3	909.1	764.8

[1] Includes all other races not shown separately.

NOTE: Beginning in 1970, births to nonresidents of the United States are excluded.

SOURCE: Division of Vital Statistics, National Center for Health Statistics: Selected data.

Table 5. Legal abortions, according to selected patient characteristics, type of procedure, and location of facility: United States, 1973-78

(Data are based on reporting by State health departments and by facilities)

Characteristic	Year					
	1973	1974	1975	1976	1977	1978
	Number of legal abortions reported					
Center for Disease Control	615,831	763,476	854,853	988,267	1,079,430	1,157,776
Alan Guttmacher Institute	744,600	898,600	1,034,200	1,179,300	1,320,000	1,409,600
	Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Age						
Under 20 years	32.7	32.7	33.1	32.1	30.8	30.0
20-24 years	32.0	31.8	31.9	33.3	34.5	35.0
25 years and over	35.3	35.6	35.0	34.6	34.7	34.9
Race						
White	72.5	69.7	67.8	66.6	66.4	67.0
All other	27.5	30.3	32.2	33.4	33.6	33.0
Marital status						
Married	27.4	27.4	26.1	24.6	24.3	26.4
Unmarried	72.6	72.6	73.9	75.4	75.7	73.6
Number of living children						
0	48.6	47.8	47.1	47.7	53.4	56.6
1	18.8	19.6	20.2	20.7	19.1	19.2
2	14.2	14.8	15.5	15.4	14.4	14.1
3	8.7	8.7	8.7	8.3	7.0	5.9
4	4.8	4.5	4.4	4.1	3.3	4.2
5 or more	4.9	4.5	4.2	3.8	2.9	
Period of gestation						
Under 9 weeks	36.1	42.6	44.6	47.0	51.2	52.2
9-10 weeks	29.4	28.7	28.4	28.0	27.2	26.9
11-12 weeks	17.9	15.4	14.9	14.4	13.1	12.3
13-15 weeks	6.9	5.5	5.0	4.5	3.4	4.0
16-20 weeks	8.0	6.5	6.1	5.1	4.3	3.7
21 weeks and over	1.7	1.2	1.0	0.9	0.9	0.9
Type of procedure						
Curettage	88.4	89.7	90.9	92.8	93.8	94.6
Intrauterine instillation	10.4	7.8	6.2	6.0	5.4	3.9
Hysterotomy or hysterectomy	0.7	0.6	0.4	0.2	0.2	0.1
Other	0.6	1.9	2.4	0.9	0.7	1.4
Location of facility						
In State of residence	74.8	86.6	89.2	90.0	90.0	89.3
Out of State of residence	25.2	13.4	10.8	10.0	10.0	10.7

NOTE: Percent distributions exclude cases for which selected characteristic was unknown and are based on abortions reported to the Center for Disease Control.

SOURCES: Center for Disease Control: Abortion Surveillance, 1978. Public Health Service, DHHS, Atlanta, Ga., Nov. 1980; Sullivan, E., Tietze, C., and Dryfoos, J.: Legal abortions in the United States, 1975-1976. Fam. Plann. Perspect. 9(3):116-129, May-June 1977; The Alan Guttmacher Institute: Personal communication, 1980.

Table 6. Legal abortions, abortion-related deaths and death rates, and relative risk of death, according to period of gestation: United States, 1973-75 and 1976-78

(Data are based primarily on reporting by State health departments and by facilities)

Year and period of gestation	Number of legal abortions reported	Abortion-related deaths		Relative risk of death[1]
		Number	Rate per 100,000 abortions	
1973-75				
Total	2,234,160	79	3.5	...
Under 9 weeks	928,814	6	0.6	1.0
9-10 weeks	642,884	14	2.2	3.7
11-12 weeks	355,217	12	3.4	5.7
13-15 weeks	127,606	9	7.1	11.8
16-20 weeks	150,754	31	20.6	34.3
21 weeks and over	28,885	7	24.2	40.3
1976-78				
Total	3,225,473	33	1.0	...
Under 9 weeks	1,620,840	5	0.3	1.0
9-10 weeks	882,051	6	0.7	2.3
11-12 weeks	425,744	2	0.5	1.7
13-15 weeks	127,890	8	6.3	21.0
16-20 weeks	139,587	10	7.2	24.0
21 weeks and over	29,361	2	6.8	22.7

[1] Relative risk based on the index rate of 0.6 for 1973-75 and 0.3 for 1976-78 for the gestation period under 9 weeks.

SOURCE: Center for Disease Control: Abortion Surveillance, 1978. Public Health Service, DHHS, Atlanta, Ga., Nov. 1980.

Table 7. Ever-married women 15-44 years of age, according to contraceptive status, method of contraception used, race, and age: United States, 1973 and 1976

(Data are based on household interviews of samples of ever-married women in the childbearing ages)

Year, race, and age	Percent of ever-married women using contraception	Method of contraception							
		Total	Female steril-ization	Male steril-ization[1]	Birth control pill	Intrauterine device	Diaphragm	Condom	Other[2]
1973	Percent distribution								
Total[3]									
15-44 years	66.4	100.0	13.6	10.4	36.6	10.2	3.4	12.6	13.3
15-24 years	66.9	100.0	4.3	2.1	65.3	10.8	*1.5	7.7	8.4
25-34 years	70.4	100.0	12.1	10.3	36.2	13.2	3.1	12.4	12.6
35-44 years	61.5	100.0	21.7	15.8	18.3	5.6	5.0	16.1	17.4
White									
15-44 years	67.8	100.0	12.5	11.2	36.1	9.8	3.6	13.4	13.4
15-24 years	67.1	100.0	4.1	2.3	64.4	10.7	*1.6	8.3	8.6
25-34 years	71.6	100.0	11.4	11.0	35.8	12.7	3.2	13.1	12.6
35-44 years	63.6	100.0	19.2	17.2	18.2	5.4	5.3	17.2	17.4
Black									
15-44 years	55.8	100.0	25.4	*1.2	41.8	13.8	1.8	4.1	11.8
15-24 years	65.2	100.0	6.8	*0.1	72.4	12.6	*0.3	*1.8	6.0
25-34 years	59.2	100.0	20.3	*2.0	41.6	18.8	*2.2	3.8	11.2
35-44 years	46.8	100.0	47.2	*1.1	17.2	8.4	*2.5	6.4	17.2

See footnotes at end of table.

Table 7. Ever-married women 15-44 years of age, according to contraceptive status, method of contraception used, race, and age: United States, 1973 and 1976—Continued

(Data are based on household interviews of samples of ever-married women in the childbearing ages)

Year, race, and age	Percent of ever-married women using contraception	Method of contraception							
		Total	Female steril-ization	Male steril-ization[1]	Birth control pill	Intrauterine device	Diaphragm	Condom	Other[2]
1976	Percent distribution								
Total[3]									
15-44 years	65.7	100.0	15.3	11.9	34.5	10.0	4.0	9.9	14.4
15-24 years	68.3	100.0	3.8	*1.3	63.9	9.4	3.3	7.0	11.1
25-34 years	69.4	100.0	15.8	10.7	34.8	11.3	4.1	9.6	13.6
35-44 years	59.3	100.0	22.7	20.9	13.6	8.3	4.5	12.3	17.7
White									
15-44 years	67.0	100.0	14.8	12.9	34.2	9.7	4.2	10.2	14.0
15-24 years	69.7	100.0	3.6	*1.4	64.2	9.3	3.6	7.2	10.7
25-34 years	70.8	100.0	15.6	11.7	34.2	11.0	4.3	9.8	13.4
35-44 years	60.6	100.0	21.6	22.8	13.1	8.0	4.5	12.8	17.4
Black									
15-44 years	56.7	100.0	21.8	*2.0	38.1	12.6	2.8	6.2	16.6
15-24 years	59.0	100.0	*7.1	*0.4	61.1	11.0	*0.5	*4.6	15.3
25-34 years	61.1	100.0	19.1	*0.4	42.7	13.6	*2.3	7.1	14.8
35-44 years	50.3	100.0	35.1	*5.2	16.9	12.1	*4.8	*6.0	19.8

[1] Refers only to currently married couples.
[2] Other methods include foam, rhythm, withdrawal, and douche.
[3] Includes all other races not shown separately.

SOURCE: Division of Vital Statistics, National Center for Health Statistics: Data from the National Survey of Family Growth.

Table 8. Death rates for all causes, according to race, sex, and age: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	841.5	764.6	760.9	739.0	714.3	638.3	612.3	606.1
All ages, crude	963.8	930.4	954.7	944.6	945.3	888.5	878.1	883.4
Under 1 year	754.6	2,848.5	2,696.4	2,463.3	2,142.4	1,641.0	1,485.6	1,434.4
1-4 years		113.4	109.1	95.9	84.5	70.8	68.8	69.2
5-9 years	61.7	50.6	49.0	43.9	42.1	35.7	34.0	33.4
10-14 years	58.1	46.6	44.0	40.5	40.6	35.7	35.1	34.3
15-19 years	108.6	97.3	92.2	95.3	110.3	101.5	101.6	100.9
20-24 years	146.0	134.9	123.6	126.6	148.0	138.2	133.5	134.7
25-29 years	159.3	135.5	130.8	134.0	144.2	136.7	132.1	131.8
30-34 years	199.4	163.0	160.7	167.9	172.9	151.0	140.9	139.7
35-39 years	283.7	238.6	233.6	242.4	247.1	209.6	195.5	189.4
40-44 years	441.3	379.8	370.2	370.0	377.0	326.1	304.7	296.1
45-49 years	682.2	592.4	590.9	583.3	584.1	512.4	482.3	471.6
50-54 years	1,042.2	947.1	943.1	924.0	889.3	784.6	754.7	742.4
55-59 years	1,562.3	1,406.5	1,385.0	1,334.9	1,361.0	1,199.8	1,138.1	1,115.9
60-64 years	2,329.0	2,097.8	2,148.3	2,120.9	2,003.5	1,832.7	1,784.9	1,774.2
65-69 years	3,328.2	3,168.2	3,141.7	3,045.3	2,969.2	2,574.7	2,480.4	2,463.0
70-74 years	5,152.0	4,695.1	4,720.6	4,420.6	4,370.8	4,050.5	3,847.1	3,787.4
75-79 years	7,979.3	7,367.2	7,204.0	6,980.3	6,721.8	6,205.1	6,073.0	6,024.2
80-84 years	11,840.8	11,467.0	11,724.0	10,814.6	10,157.8	9,102.6	8,814.7	8,954.0
85 years and over	20,193.4	18,983.3	19,857.5	20,069.0	16,344.9	15,187.9	14,725.9	14,700.7
White male								
All ages, age adjusted[3]	963.1	905.0	917.7	911.1	893.4	812.7	781.5	773.1
All ages, crude	1,089.5	1,069.6	1,098.5	1,087.6	1,086.7	1,015.3	998.2	999.8
Under 1 year	766.4	2,877.9	2,694.1	2,409.0	2,113.2	1,594.4	1,429.7	1,359.6
1-4 years		109.6	104.9	91.5	83.6	71.3	69.7	71.7
5-9 years	67.3	56.7	53.7	47.5	47.5	39.4	38.4	36.3
10-14 years	67.1	56.4	51.6	48.7	48.5	43.3	42.5	41.8
15-19 years	130.5	132.1	125.2	130.8	147.1	144.5	145.8	146.9
20-24 years	173.0	182.5	166.9	171.0	199.0	189.5	190.0	190.8
25-29 years	170.1	158.0	152.1	157.3	169.2	168.9	167.3	168.3
30-34 years	201.1	176.2	173.2	178.3	185.4	169.5	164.2	165.0
35-39 years	293.4	258.5	253.4	258.3	260.4	230.2	219.3	215.3
40-44 years	475.6	423.2	417.0	411.5	420.0	363.5	339.7	329.1
45-49 years	773.7	700.4	709.3	687.1	684.6	606.0	565.1	553.8
50-54 years	1,213.6	1,154.9	1,183.3	1,157.1	1,098.6	971.3	925.4	906.6
55-59 years	1,881.4	1,760.8	1,784.6	1,751.5	1,774.6	1,534.6	1,440.0	1,404.8
60-64 years	2,805.7	2,645.5	2,751.4	2,801.2	2,708.4	2,443.7	2,338.0	2,318.2
65-69 years	4,067.0	3,964.8	4,050.7	4,061.8	4,046.1	3,590.9	3,436.4	3,394.5
70-74 years	6,038.3	5,720.5	5,909.2	5,778.8	5,828.0	5,462.2	5,233.9	5,166.9
75-79 years	9,060.0	8,649.8	8,698.7	8,741.9	8,693.4	8,253.6	8,104.6	7,996.2
80-84 years	13,369.7	13,292.3	13,544.3	13,073.5	12,606.8	11,832.0	11,597.5	11,821.8
85 years and over	22,132.6	20,063.6	21,750.0	22,733.6	18,551.7	18,257.9	18,041.7	18,100.3

See footnotes at end of table.

Table 8. Death rates for all causes, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
White female	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	645.0	572.8	555.0	527.6	501.7	445.3	427.8	425.5
All ages, crude	803.3	777.4	801.0	800.8	812.6	783.8	783.3	796.5
Under 1 year	586.5	2,167.5	2,007.7	1,801.3	1,614.6	1,222.3	1,094.8	1,069.7
1-4 years		90.3	85.2	74.6	66.1	57.1	55.0	53.3
5-9 years	48.2	39.0	38.3	33.8	32.0	27.5	25.6	26.3
10-14 years	41.3	31.8	30.8	28.0	27.9	24.4	25.0	23.7
15-19 years	62.3	53.9	50.3	50.1	57.8	52.4	55.2	55.2
20-24 years	79.8	64.7	60.4	63.1	65.7	59.8	59.3	61.0
25-29 years	97.4	74.1	71.6	70.6	73.1	64.1	61.4	63.0
30-34 years	128.9	101.0	97.1	101.6	97.2	84.3	78.3	76.4
35-39 years	187.8	154.7	147.5	150.8	150.9	124.0	115.6	109.6
40-44 years	288.8	246.8	237.9	235.7	232.0	206.9	191.7	187.5
45-49 years	443.5	369.2	368.5	376.1	373.6	326.6	309.7	307.8
50-54 years	657.8	575.9	560.3	567.4	559.5	499.7	480.1	474.5
55-59 years	1,017.6	879.6	829.7	799.8	830.8	761.6	726.2	716.5
60-64 years	1,621.1	1,385.7	1,362.2	1,281.8	1,222.9	1,149.5	1,144.0	1,143.4
65-69 years	2,520.9	2,304.4	2,154.9	2,025.9	1,924.5	1,662.7	1,632.7	1,628.2
70-74 years	4,265.2	3,718.0	3,583.2	3,231.3	3,134.1	2,798.8	2,634.6	2,612.5
75-79 years	7,048.5	6,396.3	6,084.2	5,697.3	5,349.8	4,801.8	4,603.3	4,564.3
80-84 years	11,061.8	10,528.4	10,654.3	9,587.5	8,869.4	7,813.5	7,494.9	7,606.7
85 years and over	19,676.8	19,156.1	19,477.7	19,353.7	15,980.2	14,494.1	14,039.7	14,079.0
All other male[4]								
All ages, age adjusted[3]	1,358.5	1,187.5	1,211.0	1,217.2	1,231.4	1,097.5	1,045.9	1,029.6
All ages, crude	1,251.1	1,133.3	1,152.0	1,121.3	1,115.9	999.1	967.1	959.7
Under 1 year	1,438.8	5,348.3	5,189.4	4,871.1	4,020.0	3,001.1	2,780.4	2,708.5
1-4 years		212.2	207.3	178.3	144.7	108.8	108.1	108.1
5-9 years	98.2	77.2	72.3	70.4	62.2	55.9	51.6	51.5
10-14 years	95.8	75.5	78.8	65.0	67.8	57.4	53.9	53.1
15-19 years	216.6	168.6	165.8	172.8	224.0	164.3	145.0	136.1
20-24 years	365.4	316.0	274.9	292.0	415.5	340.7	276.6	278.4
25-29 years	429.4	379.9	343.0	392.2	456.6	435.8	382.0	356.7
30-34 years	573.0	430.6	428.6	458.4	558.8	477.1	415.1	402.3
35-39 years	702.0	566.4	599.2	662.8	723.7	630.8	560.8	548.8
40-44 years	1,039.0	880.4	876.5	948.6	1,024.3	844.7	793.0	784.7
45-49 years	1,458.5	1,311.5	1,241.5	1.324.6	1,395.1	1,166.4	1,100.8	1,021.3
50-54 years	2,332.7	1,889.0	1,916.2	1,887.4	1,935.3	1,690.0	1,624.2	1,610.3
55-59 years	3,266.3	2,693.7	2,500.5	2,492.6	2,639.5	2,392.8	2,310.8	2,266.7
60-64 years	4,274.0	3,874.9	4,053.8	3,940.8	3,534.4	3,280.8	3,360.1	3,339.1
65-69 years	4,605.4	4,580.3	5,103.7	4,853.1	4,759.2	4,036.7	3,795.2	3,814.8
70-74 years	6,340.5	6,088.5	6,493.2	6,433.9	6,557.3	6,534.9	6,196.1	5,984.5
75-79 years	8,864.1	7,169.9	7,628.0	8,180.5	8,483.1	8,254.3	8,650.4	8,724.1
80-84 years	9,291.9	9,695.2	11,017.4	9,725.4	9,855.8	9,167.4	8,986.0	9,419.8
85 years and over	15,742.1	13,766.7	15,238.7	15,761.8	11,405.2	11,693.8	11,286.1	10,678.2

See footnotes at end of table.

Table 8. Death rates for all causes, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	1,373.1	—	1,246.1	1,270.3	1,318.6	1,174.3	1,127.6	1,113.1
All ages, crude	1,260.3	—	1,181.7	1,163.0	1,186.6	1,064.0	1,037.0	1,028.7
Under 1 year	1,412.6	—	5,306.8	5,039.9	4,298.9	3,253.5	3,038.7	2,957.9
1-4 years		—	208.5	182.3	150.5	114.6	113.6	112.9
5-9 years	95.3	—	71.9	72.0	65.1	57.6	53.6	53.9
10-14 years	94.8	—	79.2	65.8	63.8	57.1	55.7	54.4
15-19 years	216.0	—	165.5	176.6	230.9	167.4	143.0	133.7
20-24 years	366.9	—	271.8	300.0	448.8	357.3	287.2	289.2
25-29 years	433.5	—	356.3	404.4	505.4	476.8	412.8	386.0
30-34 years	583.1	—	447.4	489.4	622.3	531.4	465.8	448.1
35-39 years	713.0	—	627.9	704.9	794.9	671.2	610.0	591.2
40-44 years	1,066.0	—	912.3	1,007.3	1,117.3	924.4	862.9	848.9
45-49 years	1,496.2	—	1,296.7	1,395.9	1,514.9	1,270.2	1,206.2	1,122.6
50-54 years	2,393.2	—	2,016.7	1,986.4	2,075.3	1,822.9	1,765.1	1,752.0
55-59 years	3,325.3	—	2,664.5	2,633.8	2,825.8	2,548.0	2,472.3	2,438.2
60-64 years	4,382.7	—	4,199.6	4,226.9	3,778.7	3,466.3	3,565.0	3,549.6
65-69 years	4,668.8	—	5,226.5	5,039.8	5,051.3	4,201.5	3,937.4	3,967.9
70-74 years	6,436.0	—	6,664.5	6,559.0	6,936.6	7,045.5	6,699.0	6,442.9
75-79 years	10,101.9	—	7,653.7	8,461.4	8,827.8	9,080.2	9,886.7	10,080.7
80-84 years		—	10,757.1	9,919.6	10,629.9	9,738.7	9,853.8	10,540.5
85 years and over		—	14,844.8	15,966.7	12,222.3	12,450.9	12,030.0	11,376.9
All other female[5]								
All ages, age adjusted[3]	1,095.7	909.9	893.3	831.4	770.8	648.3	621.3	605.5
All ages, crude	993.5	875.9	872.6	822.6	775.3	682.5	672.5	664.5
Under 1 year	1,163.0	4,282.1	4,067.1	3,872.7	3,169.4	2,523.0	2,304.5	2,206.5
1-4 years		185.7	174.4	156.7	123.3	93.0	87.1	89.7
5-9 years	80.1	61.1	61.0	54.5	46.0	36.8	34.3	34.4
10-14 years	69.1	48.6	44.2	40.2	38.6	31.6	28.0	28.6
15-19 years	176.6	91.2	80.4	80.2	84.7	65.4	62.8	55.9
20-24 years	253.9	164.5	135.8	121.6	138.1	110.7	99.1	97.2
25-29 years	330.9	234.0	210.2	189.2	185.2	141.7	131.7	128.5
30-34 years	457.2	322.2	307.8	288.0	250.0	183.4	165.6	159.7
35-39 years	613.6	477.6	448.1	435.6	395.7	288.9	256.1	244.8
40-44 years	924.4	686.4	660.8	637.7	586.3	434.7	404.1	380.9
45-49 years	1,246.8	1,051.4	919.4	870.5	829.0	657.8	599.7	570.1
50-54 years	1,940.7	1,567.9	1,419.5	1,246.4	1,153.0	914.1	914.5	877.4
55-59 years	2,630.0	2,109.9	1,951.8	1,677.8	1,606.4	1,367.4	1,307.5	1,271.5
60-64 years	3,579.3	2,872.4	3,019.5	2,849.3	2,218.8	1,939.0	1,895.0	1,867.3
65-69 years	3,346.8	3,348.5	3,474.4	3,206.2	3,129.5	2,331.0	2,176.1	2,150.3
70-74 years	5,153.9	4,472.4	4,742.5	4,257.2	4,488.4	4,667.0	4,298.6	3,980.1
75-79 years	7,014.5	6,156.8	5,879.2	5,714.0	5,782.2	5,832.0	6,450.8	6,620.7
80-84 years	7,220.0	6,892.2	8,477.5	7,868.8	7,421.5	6,180.9	6,265.0	6,372.9
85 years and over	13,426.9	11,214.7	12,871.2	12,998.0	10,288.9	9,177.3	8,673.5	8,449.0

See footnotes at end of table.

Table 8. Death rates for all causes, according to race, sex, and age: United States, selected years 1950-78--Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black female:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	1,106.7	---	916.9	859.9	814.4	688.4	664.4	650.5
All ages, crude	1,002.0	---	905.0	860.6	829.2	735.5	730.6	723.1
Under 1 year	1,139.3	---	4,162.2	4,001.1	3,368.8	2,740.3	2,509.6	2,413.7
1-4 years		---	173.3	159.3	129.4	96.9	91.0	94.9
5-9 years	78.2	---	61.8	56.2	47.6	37.7	35.6	36.2
10-14 years	66.6	---	44.1	40.2	40.1	31.7	28.3	29.3
15-19 years	172.7	---	81.3	81.0	86.2	65.8	62.0	56.3
20-24 years	251.3	---	138.1	125.5	144.1	115.1	102.7	101.2
25-29 years	330.5	---	220.6	195.9	198.3	150.8	143.8	139.5
30-34 years	463.6	---	323.5	304.6	267.8	196.8	178.2	175.4
35-39 years	615.7	---	467.3	457.9	428.4	308.7	275.8	264.3
40-44 years	930.1	---	682.5	668.3	637.6	473.4	440.6	415.0
45-49 years	1,262.7	---	943.4	908.4	887.0	715.5	658.4	626.7
50-54 years	1,969.8	---	1,460.5	1,288.6	1,222.0	990.8	998.5	960.1
55-59 years	2,674.4	---	2,051.1	1,739.7	1,688.5	1,454.8	1,397.3	1,362.3
60-64 years	3,633.3	---	3,113.2	2,992.2	2,335.8	2,019.6	1,987.4	1,977.5
65-69 years	3,363.2	---	3,551.9	3,324.4	3,285.3	2,387.6	2,234.5	2,199.2
70-74 years	5,201.2	---	4,832.6	4,351.9	4,728.5	5,025.3	4,606.8	4,227.3
75-79 years	8,347.0	---	5,931.2	5,869.3	6,059.7	6,390.4	7,271.0	7,579.1
80-84 years		---	8,437.3	7,926.0	7,761.0	6,472.9	6,618.5	6,827.9
85 years and over		---	13,052.6	13,143.5	10,706.6	9,558.6	9,035.3	8,793.1

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[1] Excludes deaths of nonresidents of the United States.

[2] Includes all races and both sexes.

[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

[4] Includes black males.

[5] Includes black females.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; 1950 Nonwhite Population by Race, Special report P-E No. 3B. Washington. U.S. Government Printing Office, 1951; General population characteristics, United States summary, 1960 and 1970. U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1. Washington. U.S. Government Printing Office, 1961 and 1972.

Table 9. Life expectancy at birth and at 65 years of age, according to race and sex: United States, selected years 1900-1978

(Data are based on the national vital registration system)

Specified age and year	Total			White			All other[1]		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
	Remaining life expectancy in years								
At birth									
1900[2]	47.3	46.3	48.3	47.6	46.6	48.7	33.0	32.5	33.5
1950	68.2	65.6	71.1	69.1	66.5	72.2	60.8	59.1	62.9
1960	69.7	66.6	73.1	70.6	67.4	74.1	63.6	61.1	66.3
1970[3]	70.8	67.1	74.7	71.7	68.0	75.6	65.3	61.3	69.4
1975[3]	72.5	68.7	76.5	73.2	69.4	77.2	67.9	63.6	72.3
1977[3]	73.2	69.3	77.1	73.8	70.0	77.7	68.8	64.6	73.1
1978[3]	73.3	69.5	77.2	74.0	70.2	77.8	69.2	65.0	73.6
At 65 years									
1900-1902[2]	11.9	11.5	12.2	---	11.5	12.2	---	10.4	11.4
1950	13.9	12.8	15.0	---	12.8	15.1	---	12.5	14.5
1960	14.3	12.8	15.8	14.4	12.9	15.9	13.9	12.7	15.2
1970[3]	15.2	13.1	17.0	15.2	13.1	17.1	14.9	13.2	16.4
1975[3]	16.0	13.7	18.0	16.0	13.7	18.1	15.7	13.7	17.5
1977[3]	16.3	13.9	18.3	16.3	13.9	18.4	16.0	14.0	17.8
1978[3]	16.3	14.0	18.4	16.4	14.0	18.4	16.1	14.1	18.0

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[1] For 1900-1902, data for the "all other" category were for black people only.

[2] Death registration area only. The death registration area increased from 10 States and the District of Columbia in 1900 to the coterminous United States in 1933.

[3] Excludes deaths of nonresidents of the United States.

SOURCES: National Center for Health Statistics: Vital Statistics Rates in the United States, 1940-1960, by R. D. Grove and A. M. Hetzel. DHEW Pub. No. (PHS) 1677. Public Health Service. Washington. U.S. Government Printing Office, 1968; Vital Statistics of the United States, 1970, Vol. II, Part A. DHEW Pub. No. (HRA) 75-1101. Health Resources Administration. Washington. U.S. Government Printing Office, 1974; Final mortality statistics, 1975, 1977, and 1978. Monthly Vital Statistics Report. Vols. 25, 28, and 29, Nos. 11, 1, and 6. DHEW Pub. Nos. (HRA) 77-1120, (PHS) 79-1120, and DHHS Pub. No. (PHS) 80-1120. Health Resources Administration and Public Health Service. Washington. U.S. Government Printing Office, Feb. 11, 1977, May 11, 1979, and Sept. 17, 1980; Unpublished data from the Division of Vital Statistics.

Table 10. Infant, late fetal, and perinatal mortality rates, according to race: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race and year	Infant mortality rate[1]				Late fetal mortality rate[2]	Perinatal mortality rate[3]
	Total	Neonatal		Post-neonatal		
		Under 28 days	Under 7 days			
Total	Number of deaths per 1,000 live births					
1950	29.2	20.5	17.8	8.7	14.9	32.5
1955	26.4	19.1	17.0	7.3	12.9	29.7
1960	26.0	18.7	16.7	7.3	12.1	28.6
1965	24.7	17.7	15.9	7.0	11.9	27.6
1970[4]	20.0	15.1	13.6	4.9	9.5	23.0
1975[4]	16.1	11.6	10.0	4.5	7.8	17.7
1977[4]	14.1	9.9	8.4	4.2	7.1	15.4
1978[4]	13.8	9.5	8.0	4.3	6.5	14.6
White						
1950	26.8	19.4	17.1	7.4	13.3	30.1
1955	23.6	17.7	15.9	5.9	11.6	27.3
1960	22.9	17.2	15.6	5.7	10.8	26.2
1965	21.5	16.1	14.6	5.4	10.5	25.0
1970[4]	17.8	13.8	12.5	4.0	8.6	21.1
1975[4]	14.2	10.4	9.0	3.8	7.1	16.0
1977[4]	12.3	8.7	7.4	3.6	6.5	13.9
1978[4]	12.0	8.4	7.0	3.6	6.0	13.0
All other[5]						
1950	44.5	27.5	22.8	16.9	24.8	47.0
1955	42.8	27.2	22.9	15.6	20.5	43.0
1960	43.2	26.9	22.9	16.4	19.2	41.6
1965	40.3	25.4	22.1	14.9	18.8	40.5
1970[4]	30.9	21.4	19.1	9.5	13.9	32.7
1975[4]	24.2	16.8	14.4	7.5	10.8	25.0
1977[4]	21.7	14.7	12.3	7.0	9.5	21.7
1978[4]	21.1	14.0	11.9	7.0	9.1	20.9
Black:						
1950	43.9	27.8	23.0	16.1	—	—
1955	43.1	27.8	23.5	15.3	—	—
1960	44.3	27.8	23.7	16.5	—	—
1965	41.7	26.5	23.1	15.2	—	—
1970[4]	32.6	22.8	20.3	9.9	—	—
1975[4]	26.2	18.3	15.7	7.9	—	—
1977[4]	23.6	16.1	13.5	7.6	—	—
1978[4]	23.1	15.5	13.2	7.6	—	—

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[1] Infant mortality rate is the number of deaths to infants under 1 year of age per 1,000 live births. Neonatal deaths are deaths within 28 days of birth; postneonatal deaths are deaths that occur from 28 days to 365 days after birth. Deaths within 7 days are considered early neonatal deaths.

[2] Late fetal deaths are fetal deaths of 28 weeks or more gestation. The rate is the number of late fetal deaths per 1,000 live births and late fetal deaths.

[3] Perinatal deaths are late fetal deaths plus infant deaths within 7 days of birth. The rate is the number of perinatal deaths per 1,000 live births and late fetal deaths.

[4] Excludes births and infant and late fetal deaths occurring to nonresidents of the United States.

[5] Includes black infants.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

Table 11. Infant mortality rates, according to race, geographic division, and State: United States, average annual 1966-68, 1971-73, and 1976-78

(Data are based on the national vital registration system)

Geographic division and State	1966-68			1971-73[2]			1976-78[2]		
	Total[1]	White	Black	Total[1]	White	Black	Total[1]	White	Black
	Infant deaths per 1,000 live births								
United States	22.7	19.8	38.0	18.5	16.4	29.4	14.4	12.5	24.1
New England	20.5	19.7	35.0	16.1	15.5	27.9	11.9	11.3	22.6
Maine	22.3	22.2	*30.9	17.6	17.7	*10.0	10.3	10.4	*9.0
New Hampshire	20.3	20.2	*52.6	16.9	16.9	*26.0	10.7	10.8	*4.0
Vermont	21.2	21.2	*18.2	14.8	14.9	-	12.1	12.1	*30.3
Massachusetts	20.4	19.7	35.7	15.6	15.0	28.2	11.7	11.2	19.6
Rhode Island	20.9	19.9	44.5	18.6	18.1	29.9	13.4	12.4	30.5
Connecticut	19.8	18.5	33.0	15.7	14.3	27.7	13.1	11.5	25.1
Middle Atlantic	21.9	19.1	37.8	17.7	15.6	28.8	14.5	12.5	23.9
New York	21.9	19.0	37.1	17.7	15.6	28.0	14.8	12.6	23.8
New Jersey	21.8	18.3	38.8	17.7	14.7	30.4	14.1	11.5	24.5
Pennsylvania	22.1	19.9	38.2	17.7	16.1	29.1	14.4	13.0	23.8
East North Central	22.1	19.9	37.3	18.6	16.4	31.2	14.4	12.6	25.2
Ohio	20.8	19.2	34.2	18.0	16.3	29.9	14.0	12.8	22.5
Indiana	22.3	21.0	36.8	18.6	17.3	30.6	14.0	12.9	23.2
Illinois	24.1	20.5	39.7	20.5	17.3	32.9	16.1	13.0	28.2
Michigan	22.0	19.7	36.9	18.7	16.1	31.2	14.3	12.3	24.9
Wisconsin	19.8	19.2	33.2	14.9	14.3	24.7	11.7	11.2	19.2
West North Central	20.4	19.1	38.4	17.5	16.6	28.7	13.6	12.6	25.8
Minnesota	19.2	18.9	40.0	16.7	16.5	28.0	12.3	12.0	24.8
Iowa	19.2	19.0	33.2	17.0	16.9	25.2	13.1	12.8	25.9
Missouri	22.5	19.4	40.1	18.7	16.8	29.0	14.8	12.7	26.6
North Dakota	19.6	19.3	*20.1	15.5	15.0	*30.5	13.6	13.1	*23.7
South Dakota	22.6	20.8	*16.2	18.8	16.8	*33.1	15.6	14.0	*22.2
Nebraska	18.6	17.9	30.8	17.0	16.3	31.7	13.3	12.8	24.1
Kansas	20.0	19.0	35.8	17.5	16.8	27.3	13.3	12.5	24.0
South Atlantic	25.5	20.3	38.7	20.2	16.8	29.2	16.0	12.8	24.1
Delaware	21.1	16.5	40.3	16.8	13.1	31.3	13.2	10.7	21.9
Maryland	22.2	18.7	35.5	16.6	14.0	25.3	15.4	12.3	23.4
District of Columbia	29.3	20.3	31.6	27.1	20.5	28.3	26.6	12.9	29.5
Virginia	24.1	20.1	37.6	19.8	17.1	30.1	15.3	12.7	24.3
West Virginia	24.9	24.2	41.0	19.8	19.3	33.5	15.5	15.3	23.0
North Carolina	27.3	21.0	42.1	22.3	18.4	32.0	16.7	13.4	24.6
South Carolina	28.2	20.9	39.6	22.3	17.0	31.2	18.6	13.5	26.5
Georgia	26.6	19.8	39.9	19.9	16.3	27.6	15.6	12.2	22.0
Florida	25.0	20.0	39.0	19.4	16.4	28.5	14.9	12.1	23.0
East South Central	27.6	21.8	42.4	21.6	17.8	32.2	16.4	13.3	24.9
Kentucky	23.7	22.4	37.8	17.9	17.2	25.0	13.9	13.3	21.3
Tennessee	24.6	21.1	37.5	20.6	18.1	30.0	15.4	13.4	22.9
Alabama	27.6	21.5	39.2	22.7	17.7	32.6	17.5	13.5	25.2
Mississippi	36.6	23.0	49.4	26.3	18.6	35.0	19.4	12.7	26.8

See footnotes at end of table.

Table 11. Infant mortality rates, according to race, geographic division, and State: United States, average annual 1966-68, 1971-73, and 1976-78—Continued

(Data are based on the national vital registration system)

Geographic division and State	1966-68			1971-73[2]			1976-78[2]		
	Total[1]	White	Black	Total[1]	White	Black	Total[1]	White	Black
	Infant deaths per 1,000 live births								
West South Central	24.1	20.5	37.6	19.9	18.0	28.2	15.5	13.4	24.4
Arkansas	24.3	19.9	35.8	19.3	17.3	25.3	15.7	13.3	23.1
Louisiana	26.9	18.9	39.1	21.6	17.9	27.6	17.7	12.6	25.6
Oklahoma	21.3	20.0	35.3	17.9	17.4	28.3	14.8	14.0	22.9
Texas	23.6	21.2	37.0	19.9	18.3	29.3	15.0	13.5	24.0
Mountain	22.3	20.8	33.9	17.4	16.8	25.1	12.8	12.4	19.4
Montana	21.9	20.6	*54.6	20.7	20.1	*34.2	13.9	13.4	* 5.9
Idaho	19.5	19.4	*16.4	16.9	16.6	*20.8	12.0	12.1	*20.1
Wyoming	22.9	22.3	*42.1	22.7	22.5	*40.8	14.4	14.4	*27.2
Colorado	22.3	21.8	34.2	17.3	17.2	21.7	12.0	11.9	19.0
New Mexico	25.2	23.0	31.0	19.7	18.5	28.1	14.5	13.8	23.1
Arizona	24.5	21.3	35.2	16.9	15.7	26.0	13.9	12.9	18.4
Utah	17.5	17.0	*31.8	13.5	13.3	*25.5	11.1	10.9	*19.4
Nevada	23.5	22.7	32.2	19.4	18.7	26.2	13.5	13.1	19.4
Pacific	19.9	19.1	30.5	15.9	15.3	25.1	12.3	11.8	19.9
Washington	20.0	19.1	37.9	17.3	16.9	28.9	13.0	12.9	18.8
Oregon	20.2	19.8	36.3	16.7	16.6	28.0	12.6	12.5	20.6
California	19.8	19.1	30.1	15.6	14.9	24.9	12.1	11.5	20.0
Alaska	27.4	19.1	*26.5	18.7	18.3	*22.7	15.2	13.4	*20.3
Hawaii	17.8	15.3	*24.2	15.4	15.5	*12.6	11.1	11.1	*12.8

[1] Includes all other races not shown separately.

[2] Excludes births and infant deaths occurring to nonresidents of the United States.

SOURCE: National Center for Health Statistics: Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

Table 12. Infant mortality rates and perinatal mortality ratios: Selected countries, 1973 and 1978

(Data are based on national vital registration systems)

Country	Infant mortality rate		Average annual percent change 1973-78	Perinatal mortality ratio[2]		Average annual percent change 1973-78
	1973	1978[1]		1973[3]	1978[4]	
	Infant deaths per 1,000 live births			Perinatal deaths per 1,000 live births		
Canada	15.5	12.4	-5.4	17.7	15.1	-5.2
United States	17.7	13.8	-4.9	20.7	15.2	-6.0
Austria	23.8	15.0	-8.8	24.8	15.0	-9.6
Denmark	11.5	8.9	-5.0	14.6	10.7	-7.5
England and Wales	16.9	13.1	-5.0	21.3	17.1	-5.3
France	15.5	10.6	-7.3	[5]18.8	15.8	-3.4
German Democratic Republic	15.6	13.2	-3.3	19.4	15.2	-4.8
German Federal Republic	22.7	14.7	-8.3	23.2	13.8	-9.9
Ireland	18.0	15.6	-3.5	23.1	21.8	-2.9
Italy	25.7	17.7	-8.9	29.6	20.8	-6.8
Netherlands	11.5	9.6	-3.5	16.4	13.0	-5.6
Sweden	9.9	7.8	-4.7	14.1	9.6	-7.3
Switzerland	13.2	8.6	-8.2	15.5	10.7	-7.1
Israel	22.8	17.2	-5.5	21.2	17.4	-3.9
Japan	11.3	8.4	-5.8	18.0	13.0	-6.3
Australia	16.5	12.5	-6.7	22.4	17.8	-5.6
New Zealand	16.2	14.2	-3.2	19.4	14.3	-5.0

[1] Data for Canada, Ireland, Italy, Australia and New Zealand refer to 1977; data for Denmark and France are provisional.
[2] Fetal deaths of 28 weeks or more gestation plus infant deaths within 7 days per 1,000 live births. For all countries, fetal deaths of unknown gestation period are included in the 28 weeks or more gestation. This is not the usual way of calculating the perinatal ratio for the United States, but it was done for the purpose of comparison.
[3] Data for New Zealand refer to 1971; data for France, German Democratic Republic, and Italy refer to 1972.
[4] Data for Ireland refer to 1975; data for Canada, Denmark, England and Wales, France, German Democratic Republic, Italy, Netherlands, Australia, and New Zealand refer to 1977; data for France are provisional.
[5] Excludes infants who have died before registration of birth.

NOTE: Countries are grouped by continent.

SOURCES: World Health Organization: World Health Statistics, 1973-76 and 1980. Vol. 1, Geneva. World Health Organization, 1976 and 1980; United Nations: Demographic Yearbook 1974. Pub. No. ST/ESA/STAT/R.3. New York. United Nations, 1975.

Table 13. Life expectancy at birth, according to sex: Selected countries, 1973 and 1978

(Data are based on reporting by countries)

Country	Male			Female		
	1973[1]	1978[2]	Average annual change in years	1973[1]	1978[2]	Average annual change in years
	Life expectancy in years			Life expectancy in years		
Canada	69.5	70.5	0.3	77.0	78.2	0.3
United States	67.6	69.5	0.4	75.3	77.2	0.4
Austria	67.4	68.4	0.2	74.7	75.7	0.2
Denmark	71.1	71.7	0.1	76.6	77.7	0.2
England and Wales	69.2	70.2	0.3	75.5	76.3	0.2
France	69.5	69.9	0.1	77.3	77.9	0.2
German Democratic Republic	68.9	68.9	-	74.2	74.5	0.1
German Federal Republic	67.8	69.2	0.3	74.4	76.0	0.3
Ireland	68.5	69.0	0.2	73.4	74.3	0.3
Italy	68.9	69.8	0.3	75.2	76.1	0.3
Netherlands	71.2	72.0	0.2	77.2	78.7	0.3
Sweden	72.1	72.5	0.1	77.7	79.0	0.3
Switzerland	71.1	72.0	0.2	77.2	78.9	0.3
Israel[3]	70.2	71.6	0.3	73.2	75.1	0.4
Japan	70.9	73.2	0.5	76.3	78.6	0.5
Australia	68.3	70.0	0.4	75.3	77.0	0.4
New Zealand	69.2	69.4	0.1	74.8	75.6	0.2

[1] Data for the German Democratic Republic refer to the average for the period 1969-70; data for Ireland and Italy refer to 1972.

[2] Data for Ireland and Italy refer to 1975; data for France, German Democratic Republic, and New Zealand refer to 1976; data for Canada, England and Wales, and Australia refer to 1977.

[3] Jewish population only for 1973.

NOTE: Countries are grouped by continent.

SOURCES: World Health Organization: World Health Statistics, 1973-76 and 1980. Vol. 1. Geneva. World Health Organization, 1976 and 1980; United Nations: Demographic Yearbook, 1974. Pub. No. ST/ESA/STAT/R/3. New York, United Nations, 1975; National Center for Health Statistics: Vital Statistics of the United States, 1973, Vol. II, Sec. 5. DHEW Pub. No. (HRA) 77-1101. Health Resources Administration. Washington. U.S. Government Printing Office, 1977; Final mortality statistics, 1978. Monthly Vital Statistics Report, Vol. 29, No. 6, Supplement. DHHS Pub. No. (PHS) 80-1120. Public Health Service. Washington. U.S. Government Printing Office, Sept. 17, 1980.

Table 14. Age-adjusted death rates for selected causes of death, according to race and sex: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race, sex, and cause of death	Year 1950	1955	1960	1965	1970	1975	1977	1978
Total[1]	Deaths per 100,000 resident population							
All causes	841.5	764.5	760.9	739.0	714.3	638.3	612.3	606.1
Diseases of the heart	307.6	287.5	286.2	273.9	253.6	220.5	210.4	207.7
Cerebrovascular disease	88.8	83.0	79.7	72.7	66.3	54.5	48.2	45.3
Malignant neoplasms	125.4	125.8	125.8	127.0	129.9	130.9	133.0	133.8
Respiratory system	12.8	16.0	19.2	23.0	28.4	32.5	34.3	35.4
Digestive system	47.7	43.5	41.1	38.3	35.2	33.6	33.4	33.4
Breast[2]	22.2	22.7	22.3	22.8	23.1	22.8	23.5	23.1
Influenza and pneumonia	26.2	21.0	28.0	23.5	22.1	16.6	14.2	15.4
Tuberculosis	21.7	8.4	5.4	3.6	2.2	1.2	1.0	1.0
Cirrhosis of liver	8.5	9.4	10.5	12.1	14.7	13.8	13.1	12.5
Diabetes mellitus	14.3	13.0	13.6	13.4	14.1	11.6	10.4	10.4
All accidents	57.5	54.4	49.9	53.3	53.7	44.8	43.8	44.3
Motor vehicle accidents	23.3	24.6	22.5	26.5	27.4	21.3	22.4	23.4
Suicide	11.0	9.9	10.6	11.4	11.8	12.6	12.9	12.0
Homicide	5.4	4.8	5.2	6.2	9.1	10.5	9.6	9.6
White male								
All causes	963.1	905.0	917.7	911.1	893.4	812.7	781.5	773.1
Diseases of the heart	381.1	367.4	375.4	369.2	347.6	308.0	294.0	288.7
Cerebrovascular disease	87.0	82.7	80.3	74.2	68.8	57.4	50.5	46.8
Malignant neoplasms	130.9	137.4	141.6	147.8	154.3	157.2	160.0	161.2
Respiratory system	21.6	28.5	34.6	41.5	49.9	54.6	56.4	57.4
Digestive system	54.0	50.0	47.5	45.1	41.9	40.2	40.0	40.0
Influenza and pneumonia	27.1	22.3	31.0	27.1	26.0	21.0	18.1	19.6
Tuberculosis	23.3	10.0	6.8	4.5	2.6	1.4	1.2	1.1
Cirrhosis of liver	11.6	12.9	14.4	15.6	18.8	17.9	16.7	16.1
Diabetes mellitus	11.3	10.9	11.6	11.9	12.7	10.7	9.8	9.8
All accidents	80.9	77.8	70.5	75.5	76.2	64.8	63.2	64.5
Motor vehicle accidents	35.9	37.8	34.0	39.4	40.1	31.7	33.2	35.2
Suicide	18.1	16.5	17.5	17.7	18.2	19.8	20.6	19.2
Homicide	3.9	3.5	3.9	4.8	7.3	9.4	8.8	9.2

See footnotes at end of table.

Table 14. Age-adjusted death rates for selected causes of death, according to race and sex: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and cause of death	Year							
	1950	1955	1960	1965	1970	1975	1977	1978
	Deaths per 100,000 resident population							
White female								
All causes	645.0	572.8	555.0	527.6	501.7	445.3	427.8	425.5
Diseases of the heart	223.6	204.0	197.1	183.9	167.8	144.2	137.2	136.4
Cerebrovascular disease	79.7	73.2	68.7	61.5	56.2	46.8	41.5	39.3
Malignant neoplasms	119.4	114.3	109.5	107.4	107.6	106.9	108.3	109.0
Respiratory system	4.6	4.6	5.1	6.8	10.1	13.8	15.6	16.8
Digestive system	41.1	36.7	33.9	30.9	28.1	26.4	26.0	26.1
Breast[2]	22.5	22.9	22.4	22.9	23.4	23.0	23.6	23.1
Influenza and pneumonia	18.9	14.9	19.0	15.9	15.0	11.7	9.8	10.9
Tuberculosis	10.2	3.6	2.2	1.3	0.8	0.5	0.4	0.4
Cirrhosis of liver	5.8	6.1	6.6	7.6	8.7	7.9	7.5	7.2
Diabetes mellitus	16.4	14.1	13.7	12.8	12.8	10.2	9.0	9.1
All accidents	30.6	27.6	25.5	27.6	27.2	22.4	22.7	22.9
Motor vehicle accidents	10.6	11.4	11.1	13.6	14.4	10.9	12.2	12.6
Suicide	5.3	4.8	5.3	6.7	7.2	7.3	7.2	6.6
Homicide	1.4	1.3	1.5	1.7	2.2	2.9	2.9	2.9
Black male								
All causes	1,373.1	---	1,246.1	1,270.3	1,318.6	1,174.3	1,127.6	1,113.1
Diseases of the heart	415.5	---	381.2	384.1	375.9	328.9	322.4	321.0
Cerebrovascular disease	146.2	---	141.2	138.1	124.2	96.5	87.2	83.8
Malignant neoplasms	126.1	---	158.5	174.1	198.0	214.4	221.9	223.7
Respiratory system	16.9	---	36.6	44.7	60.8	72.5	78.3	79.1
Digestive system	59.4	---	60.4	62.0	58.9	60.5	60.8	58.6
Influenza and pneumonia	63.8	---	70.2	54.8	53.8	35.6	31.6	33.4
Tuberculosis	80.5	---	21.9	15.9	10.8	6.3	6.2	5.2
Cirrhosis of liver	8.8	---	14.8	23.8	33.1	33.7	33.2	30.4
Diabetes mellitus	11.5	---	16.2	17.7	21.2	18.7	17.3	17.4
All accidents	105.7	---	100.0	108.9	119.5	92.4	86.5	84.0
Motor vehicle accidents	39.8	---	38.2	45.2	50.1	35.8	35.3	35.0
Suicide	7.0	---	7.8	9.1	9.9	11.6	11.9	12.1
Homicide	51.1	---	44.9	54.5	82.1	80.6	67.7	65.6

See footnotes at end of table.

Table 14. Age-adjusted death rates for selected causes of death, according to race and sex: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and cause of death	Year							
	1950	1955	1960	1965	1970	1975	1977	1978
Black female	Deaths per 100,000 resident population							
All causes	1,106.7	—	916.9	859.9	814.4	688.4	664.4	650.5
Diseases of the heart	349.5	—	292.6	271.1	251.7	209.4	204.2	201.1
Cerebrovascular disease	155.6	—	139.5	126.4	107.9	81.3	73.3	68.7
Malignant neoplasms	131.9	—	127.8	124.3	123.5	124.7	129.8	129.2
Respiratory system	4.1	—	5.5	7.1	10.9	14.2	16.7	16.9
Digestive system	40.2	—	37.5	35.6	34.1	33.9	34.4	34.8
Breast[2]	19.3	—	21.3	21.8	21.5	22.5	24.7	24.1
Influenza and pneumonia	50.4	—	43.9	33.4	29.2	16.7	14.9	15.5
Tuberculosis	51.2	—	9.2	6.2	4.1	2.4	1.8	1.7
Cirrhosis of liver	5.7	—	8.9	12.9	17.8	15.9	15.6	14.7
Diabetes mellitus	22.7	—	27.3	28.0	30.9	26.0	23.5	22.4
All accidents	38.5	—	35.9	35.3	35.3	27.6	25.7	26.1
Motor vehicle accidents	10.3	—	10.0	12.7	13.8	9.4	8.9	9.8
Suicide	1.7	—	1.9	2.5	2.9	3.0	3.3	3.0
Homicide	11.7	—	11.8	12.3	15.0	16.3	13.8	13.5

[1] Includes all other races not shown separately.
[2] Female only.

NOTES: Age adjusted rates are computed by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups. Because of decennial revisions to the International List of Causes of Death and changes in rules for cause-of-death selection, there is lack of comparability to a varying degree for some causes from one revision to the next. The beginning dates of the revisions are 1949, 1958, and 1968. The cause-of-death titles are based on the Eighth Revision International Classification of Diseases, Adapted for Use in the United States (ICDA).

SOURCES: National Center for Health Statistics: Vital Statistics Rates in the United States, 1940-1960, by R. D. Grove and A. M. Hetzel. DHEW Pub. No. (PHS) 1677. Public Health Service. Washington. U.S. Government Printing Office, 1968; Unpublished data from the Division of Vital Statistics; Vital Statistics of the United States, Vol. II, 1950-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; General population characteristics, United States Summary, 1960 and 1970. U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1. Washington. U.S. Government Printing Office, 1961 and 1972.

Table 15. Death rates for diseases of the heart, according to race, sex, and age: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	307.6	287.5	286.2	273.9	253.6	220.5	210.4	207.7
All ages, crude	356.8	356.5	369.0	368.0	362.0	336.2	332.3	334.2
Under 25 years	5.0	3.2	2.4	2.1	2.2	2.4	2.5	2.8
Under 1 year	4.1	7.4	6.6	9.8	13.1	20.3	23.1	26.3
1-24 years	5.0	3.0	2.1	1.7	1.8	1.8	1.8	1.9
25-29 years	14.8	11.7	9.9	8.6	7.0	5.6	5.7	5.4
30-34 years	27.5	22.4	20.9	19.5	16.6	12.4	11.8	11.5
35-39 years	57.3	49.1	47.7	46.0	40.8	32.6	30.0	29.0
40-44 years	122.5	107.7	103.5	98.8	90.7	76.0	70.5	67.2
45-49 years	228.7	200.8	197.6	188.4	174.4	147.3	137.8	135.6
50-54 years	397.5	362.0	355.8	340.4	308.3	261.9	248.6	239.1
55-59 years	642.2	584.1	571.6	535.7	514.3	437.0	405.3	397.3
60-64 years	1,007.9	915.2	934.2	905.6	811.9	710.3	678.7	670.2
65 years and over	2,844.5	2,772.7	2,823.0	2,778.7	2,683.3	2,403.9	2,334.0	2,331.2
65-69 years	1,494.6	1,427.9	1,412.6	1,348.1	1,263.8	1,049.5	992.3	975.7
70-74 years	2,348.1	2,168.5	2,173.5	1,999.9	1,936.4	1,708.2	1,605.8	1,574.5
75-79 years	3,683.4	3,462.1	3,358.8	3,242.5	3,052.2	2,716.1	2,654.7	2,618.6
80-84 years	5,476.1	5,421.5	5,501.5	5,103.6	4,744.1	4,133.8	3,998.6	4,061.0
85 years and over	9,151.0	8.917.2	9,317.8	9,538.4	7,891.3	7,282.0	7,095.8	7,084.2
White male								
All ages, age adjusted[3]	381.1	367.4	375.4	369.2	347.6	308.0	294.0	288.7
All ages, crude	434.2	438.5	454.6	450.8	438.3	401.1	392.4	390.8
Under 25 years	4.2	2.8	2.1	1.8	2.2	2.3	2.5	2.7
Under 1 year	4.6	6.7	6.9	8.9	12.0	19.3	24.0	25.0
1-24 years	4.2	2.6	1.9	1.5	1.8	1.8	1.7	1.9
25-29 years	14.4	12.3	9.5	8.2	6.8	6.1	6.2	5.5
30-34 years	29.0	26.6	24.9	22.6	18.8	14.4	14.7	14.0
35-39 years	68.4	66.7	66.0	62.2	54.8	43.4	41.1	40.0
40-44 years	160.4	152.4	151.7	144.8	131.3	111.6	102.6	97.0
45-49 years	313.3	291.6	300.4	287.1	266.0	228.5	210.3	206.3
50-54 years	544.6	523.9	540.4	520.3	474.2	405.9	382.2	365.8
55-59 years	878.6	836.8	842.0	812.8	784.3	668.9	614.1	599.0
60-64 years	1,324.3	1,262.6	1,311.6	1,314.8	1,209.9	1,067.4	1,004.0	991.3
65 years and over	3,302.2	3,251.2	3,363.2	3,401.3	3,316.2	2,986.0	2,894.8	2,865.4
65-69 years	1,939.7	1,889.6	1,928.7	1,903.1	1,828.8	1,567.9	1,487.0	1,449.3
70-74 years	2,852.9	2,724.2	2,788.8	2,679.5	2,641.4	2,367.3	2,260.5	2,222.6
75-79 years	4,248.7	4,090.3	4,099.6	4,082.8	3,939.0	3,600.1	3,542.3	3,457.5
80-84 years	6,186.6	6,258.3	6,340.5	6,137.4	5,828.7	5,283.2	5,142.5	5,243.2
85 years and over	9,959.6	9,316.0	10,135.8	10,657.3	8,818.0	8,550.3	8,472.2	8,444.7

See footnotes at end of table.

Table 15. Death rates for diseases of the heart, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
White female	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	223.6	204.0	197.1	183.9	167.8	144.2	137.2	136.4
All ages, crude	290.5	293.0	306.5	310.7	313.8	301.3	301.8	308.5
Under 25 years	4.2	2.4	1.7	1.5	1.4	1.7	1.7	2.0
Under 1 year	2.9	5.6	4.3	7.4	7.0	16.0	16.2	19.2
1-24 years	4.3	2.3	1.5	1.3	1.2	1.2	1.2	1.4
25-29 years	10.4	7.3	6.2	5.0	3.6	2.9	2.8	2.9
30-34 years	17.0	11.6	10.0	9.2	7.7	5.7	5.4	4.9
35-39 years	29.8	20.8	18.5	17.9	15.3	12.1	10.6	10.7
40-44 years	56.3	42.3	39.4	34.5	31.7	27.8	25.4	23.7
45-49 years	103.8	78.7	72.7	70.9	63.3	51.8	49.3	49.3
50-54 years	184.2	149.8	137.9	134.0	121.7	103.4	96.8	92.1
55-59 years	331.4	282.1	263.4	239.1	227.7	194.0	179.8	176.4
60-64 years	613.9	522.9	518.9	468.1	419.4	360.0	349.0	344.7
65 years and over	2,503.1	2,430.0	2,432.8	2,367.9	2,283.9	2,053.1	1,999.9	2,019.9
65-69 years	1,055.9	975.3	914.7	852.3	763.5	619.3	587.5	582.1
70-74 years	1,891.2	1,682.6	1,635.6	1,453.1	1,384.7	1,165.4	1,073.7	1,063.1
75-79 years	3,237.2	3,015.1	2,848.9	2,672.8	2,473.6	2,152.0	2,053.7	2,031.1
80-84 years	5,166.9	5,041.9	5,062.0	4,591.4	4,221.5	3,644.7	3,511.9	3,562.5
85 years and over	9,085.7	9,155.9	9,280.8	9,333.2	7,839.9	7,105.3	6,921.5	6,971.6
All other male[4]								
All ages, age adjusted[3]	407.5	369.2	368.3	366.2	350.8	307.0	297.8	295.9
All ages, crude	342.0	319.4	320.5	318.4	310.2	277.1	273.3	273.9
Under 25 years	9.7	6.8	5.3	4.9	5.2	4.9	5.1	5.4
Under 1 year	5.9	12.6	13.1	20.4	32.2	35.4	39.3	45.2
1-24 years	9.9	6.5	4.9	4.1	4.1	3.8	3.7	3.9
25-29 years	31.2	28.8	26.2	27.4	26.5	19.1	18.9	17.7
30-34 years	71.9	51.1	53.7	55.1	49.9	41.7	35.2	36.5
35-39 years	129.0	106.7	112.5	118.7	112.3	96.3	83.8	82.2
40-44 years	261.8	232.3	211.3	233.6	230.2	178.2	171.4	172.6
45-49 years	428.9	414.1	365.6	374.5	376.1	301.6	290.9	274.5
50-54 years	813.9	676.2	631.0	627.2	585.0	507.9	494.6	495.0
55-59 years	1,196.4	999.4	912.1	876.2	891.0	758.8	752.9	752.0
60-64 years	1,663.9	1,522.6	1,540.7	1,499.1	1,267.5	1,126.5	1,177.6	1,155.9
65 years and over	2,637.9	2,562.6	2,752.1	2,715.7	2,680.1	2,431.5	2,331.4	2,329.5
65-69 years	1,856.9	1,811.7	1,983.3	1,864.3	1,816.9	1,446.6	1,350.3	1,355.0
70-74 years	2,518.1	2,467.6	2,562.5	2,429.8	2,540.9	2,437.6	2,262.9	2,169.9
75-79 years	3,578.1	3,066.3	3,098.6	3,277.0	3,359.3	3,152.2	3,261.0	3,360.7
80-84 years	3,845.9	4,064.3	4,489.1	3,973.0	3,948.9	3,589.5	3,466.7	3,621.0
85 years and over	6,152.6	5,720.8	6,128.6	6,929.4	4,983.6	4,917.2	4,661.1	4,438.5

See footnotes at end of table.

Table 15. Death rates for diseases of the heart, according to race, sex, and age: United States, selected years 1950-78--Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	415.5	---	381.2	384.1	375.9	328.9	322.4	321.0
All ages, crude	348.4	---	330.6	331.7	330.3	296.1	294.7	294.1
Under 25 years	9.8	---	5.3	5.1	5.4	5.2	5.4	5.7
Under 1 year	---	---	13.9	21.3	33.5	37.2	43.8	48.3
1-24 years	---	---	4.8	4.3	4.3	4.0	3.9	4.1
25-29 years	32.5	---	28.1	28.4	28.0	21.2	20.8	19.8
30-34 years	73.8	---	57.7	59.7	57.4	47.9	40.3	41.5
35-39 years	133.7	---	120.0	127.7	124.5	104.2	93.2	90.1
40-44 years	271.4	---	222.1	250.1	253.4	194.3	188.0	189.7
45-49 years	442.3	---	386.0	397.3	412.8	329.7	322.3	301.6
50-54 years	841.2	---	667.0	661.6	626.1	547.8	536.8	539.9
55-59 years	1,225.8	---	973.2	931.4	954.3	804.5	805.3	807.5
60-64 years	1,717.3	---	1,593.9	1,613.1	1,354.6	1,189.7	1,247.6	1,227.7
65 years and over	2,680.8	---	2,798.4	2,790.4	2,836.7	2,580.9	2,491.1	2,482.3
65-69 years	1,894.9	---	2,030.4	1,937.9	1,934.9	1,509.7	1,405.0	1,408.8
70-74 years	2,570.3	---	2,661.2	2,547.8	2,694.5	2,636.9	2,458.3	2,327.1
75-79 years	4,107.9	---	3,146.3	3,422.8	3,504.9	3,482.8	3,734.5	3,887.7
80-84 years		---	4,409.5	4,078.6	4,305.1	3,826.7	3,803.8	4,067.6
85 years and over		---	6,037.9	7,113.3	5,367.6	5,296.2	5,031.7	4,726.2
All other female[5]								
All ages, age adjusted[3]	342.9	293.0	283.3	259.9	236.6	194.6	188.7	184.8
All ages, crude	283.0	256.8	255.5	248.6	241.0	214.7	216.4	214.7
Under 25 years	11.4	7.5	5.3	4.6	4.7	3.9	4.0	5.0
Under 1 year	6.4	16.3	11.7	17.4	31.4	31.3	35.0	46.9
1-24 years	11.7	6.9	4.9	3.9	3.5	2.9	2.9	3.4
25-29 years	37.3	26.7	23.1	19.8	14.2	7.6	9.6	8.9
30-34 years	66.1	51.1	43.8	36.7	31.6	17.5	14.4	15.9
35-39 years	129.1	91.2	83.2	73.5	59.6	45.2	40.4	31.4
40-44 years	245.5	177.2	158.2	147.8	118.8	80.0	76.2	74.4
45-49 years	397.6	319.1	257.9	227.0	203.2	146.3	137.7	137.1
50-54 years	667.9	542.7	455.1	390.1	342.0	247.5	249.6	236.5
55-59 years	998.8	789.2	712.6	592.7	535.5	436.3	401.7	394.6
60-64 years	1,421.7	1,143.2	1,170.6	1,100.9	828.7	686.7	658.2	650.6
65 years and over	2,158.2	2,075.8	2,197.2	2,090.8	2,094.4	1,864.5	1,851.0	1,815.9
65-69 years	1,366.7	1,394.6	1,393.3	1,251.3	1,226.8	892.9	805.9	804.9
70-74 years	2,160.0	1,879.6	2,006.4	1,765.9	1,836.4	1,867.0	1,724.2	1,566.6
75-79 years	3,059.7	2,712.3	2,507.5	2,503.7	2,492.6	2,382.9	2,705.5	2,763.6
80-84 years	2,955.0	3,045.1	3,730.2	3,570.1	3,353.5	2,638.9	2,700.0	2,748.5
85 years and over	5,350.0	4,811.8	5,564.1	5,912.2	4,784.7	4,181.8	4,050.0	3,852.3

See footnotes at end of table.

Table 15. Death rates for diseases of the heart, according to race, sex, and age: United States, selected years 1950-78--Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black female:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	349.5	—	292.6	271.1	251.7	209.4	204.2	201.1
All ages, crude	289.9	—	268.5	263.8	261.0	235.7	239.0	237.5
Under 25 years	11.4	—	5.4	4.8	4.8	4.2	4.3	5.3
Under 1 year	—	—	12.0	17.9	31.3	34.8	37.7	51.7
1-24 years	—	—	5.0	4.1	3.7	3.1	3.1	3.6
25-29 years	38.3	—	24.4	20.3	16.0	8.9	11.0	9.7
30-34 years	67.4	—	47.0	40.3	34.5	20.1	16.9	18.4
35-39 years	131.6	—	88.5	79.3	66.7	49.5	45.8	35.0
40-44 years	249.5	—	166.8	156.6	133.0	90.8	84.8	84.2
45-49 years	403.0	—	269.1	241.3	223.2	164.9	156.9	156.2
50-54 years	682.0	—	471.8	409.4	367.8	273.1	279.8	265.3
55-59 years	1,022.7	—	754.8	619.9	567.6	471.2	435.6	430.6
60-64 years	1,457.0	—	1,211.1	1,165.4	878.2	726.8	697.9	696.3
65 years and over	2,172.9	—	2,234.7	2,151.9	2,199.4	1,970.1	1,957.3	1,925.3
65-69 years	1,378.8	—	1,430.6	1,307.0	1,291.6	924.3	838.2	832.7
70-74 years	2,188.3	—	2,055.2	1,816.2	1,947.6	2,029.6	1,859.8	1,681.2
75-79 years	3,499.3	—	2,545.0	2,585.8	2,625.8	2,632.5	3,060.6	3,185.0
80-84 years		—	3,743.1	3,632.9	3,536.8	2,798.3	2,874.2	2,982.0
85 years and over		—	5,650.0	6,030.4	5,003.8	4,398.0	4,247.1	4,044.6

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[1] Excludes deaths of nonresidents of the United States.
[2] Includes all races and both sexes.
[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.
[4] Includes black males.
[5] Includes black females.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for diseases of the heart are Sixth Revision, Nos. 400-402, 410-443, for 1950 and 1955; Seventh Revision, Nos. 400-402, 410-443, for 1960 and 1965; and Eighth Revision, Nos. 390-398, 402, 404, 410-414, 420-429, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; 1950 Nonwhite Population by Race, Special report P-E No. 3B. Washington. U.S. Government Printing Office, 1951; General population characteristics, United States summary, 1960 and 1970, U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1, Washington. U.S. Government Printing Office, 1961 and 1972.

Table 16. Death rates for ischemic heart disease, according to race, sex, and age: United States, selected years 1968-78

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1968	1969	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 resident population					
All ages, age adjusted[3]	241.6	234.7	228.1	196.1	185.0	180.9
All ages, crude	338.4	332.6	328.1	301.7	295.1	294.3
Under 25 years	0.3	0.3	0.3	0.2	0.2	0.2
25-29 years	2.8	2.9	3.1	2.0	2.0	2.0
30-34 years	10.4	10.1	10.0	7.4	6.9	6.5
35-39 years	32.4	32.1	30.4	23.8	21.8	20.6
40-44 years	79.3	76.6	73.7	62.3	56.8	53.5
45-49 years	158.3	153.2	148.6	126.3	117.0	113.2
50-54 years	283.8	275.7	269.6	228.6	214.0	204.3
55-59 years	479.2	463.2	457.9	385.5	354.4	343.7
60-64 years	781.5	744.4	733.1	633.8	598.5	586.9
65 years and over	2,573.1	2,527.1	2,470.4	2,186.7	2,101.2	2,080.8
65-69 years	1,213.6	1,178.0	1,151.9	944.5	882.1	858.3
70-74 years	1,862.8	1,813.2	1,785.3	1,547.5	1,438.8	1,397.3
75-79 years	2,932.7	2,835.6	2,824.2	2,481.6	2,394.8	2,347.5
80-84 years	4,581.0	4,519.8	4,383.5	3,777.4	3,617.9	3,639.9
85 years and over	8,483.0	8,284.5	7,249.4	6,640.0	6,420.1	6,357.8
White male						
All ages, age adjusted[3]	336.6	329.1	320.3	280.6	264.7	257.8
All ages, crude	419.3	411.9	404.9	366.3	354.2	350.0
Under 25 years	0.3	0.3	0.3	0.3	0.2	0.2
25-29 years	3.4	3.3	3.8	2.8	2.4	2.5
30-34 years	13.7	13.3	13.3	10.6	10.1	9.3
35-39 years	48.7	48.5	46.0	35.8	33.1	32.2
40-44 years	123.4	120.0	115.6	99.1	89.2	83.3
45-49 years	255.0	248.7	240.2	205.4	188.3	182.6
50-54 years	454.1	442.5	433.0	368.8	343.3	324.3
55-59 years	746.5	731.9	722.2	608.5	554.0	536.4
60-64 years	1,187.1	1,144.2	1,120.7	977.6	907.6	890.9
65 years and over	3,204.0	3,153.9	3,090.3	2,747.3	2,633.4	2,586.7
65-69 years	1,760.1	1,723.8	1,698.5	1,441.3	1,349.9	1,301.7
70-74 years	2,582.9	2,524.2	2,468.7	2,179.7	2,056.7	2,007.7
75-79 years	3,792.5	3,686.6	3,686.6	3,323.3	3,232.2	3,144.0
80-84 years	5,597.4	5,560.1	5,436.4	4,859.0	4,686.6	4,734.7
85 years and over	9,598.7	9,443.1	8.164.2	7,841.9	7,683.4	7,597.7

See footnotes at end of table.

Table 16. Death rates for ischemic heart disease, according to race, sex, and age: United States, selected years 1968-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1968	1969	1970[1]	1975[1]	1977[1]	1978[1]
White female	Number of deaths per 100,000 resident population					
All ages, age adjusted[3]	157.6	152.4	148.5	126.3	119.0	117.2
All ages, crude	286.6	283.7	282.5	269.2	267.5	271.0
Under 25 years	0.2	0.2	0.1	0.1	0.1	0.1
25-29 years	1.1	1.0	1.2	0.6	0.7	0.7
30-34 years	3.4	3.0	3.5	2.3	2.1	2.1
35-39 years	8.7	9.2	8.4	7.1	5.8	6.0
40-44 years	23.3	22.4	21.1	18.8	17.0	15.5
45-49 years	48.6	46.0	45.8	38.9	36.3	36.3
50-54 years	99.3	95.8	96.1	81.7	75.5	71.9
55-59 years	200.1	188.5	189.6	161.6	147.6	143.4
60-64 years	381.3	358.2	364.1	308.9	296.7	290.4
65 years and over	2,174.5	2,139.7	2,093.4	1,863.6	1,799.2	1,800.8
65-69 years	731.0	700.3	685.3	546.5	510.8	502.1
70-74 years	1,315.4	1,280.1	1,269.0	1,046.5	954.9	932.0
75-79 years	2,372.5	2,289.1	2,276.3	1,963.3	1,850.8	1,815.1
80-84 years	4,095.3	4,025.6	3,889.7	3,331.1	3,179.7	3,195.2
85 years and over	8,311.6	8,118.8	7,192.3	6,484.7	6,281.9	6,276.0
All other male[4]						
All ages, age adjusted[3]	316.6	306.7	294.4	254.0	245.3	241.1
All ages, crude	278.8	269.5	261.1	229.9	225.7	223.7
Under 25 years	0.9	0.7	0.7	0.5	0.4	0.4
25-29 years	10.6	11.5	10.9	6.5	7.6	7.3
30-34 years	31.9	36.6	28.5	20.9	18.8	20.0
35-39 years	87.6	81.9	75.0	61.1	57.7	52.6
40-44 years	182.9	180.4	174.0	135.2	128.1	126.5
45-49 years	328.9	318.9	304.5	245.4	232.2	211.3
50-54 years	521.9	521.7	483.5	421.5	404.8	405.1
55-59 years	820.6	766.7	750.1	633.8	626.5	620.2
60-64 years	1,222.9	1,128.2	1,084.7	950.4	989.5	971.8
65 years and over	2,469.4	2,421.0	2,349.4	2,086.8	1,990.7	1,967.0
65-69 years	1,655.5	1,630.6	1,568.2	1,223.3	1,145.7	1,132.3
70-74 years	2,318.5	2,213.8	2,234.3	2,096.3	1,930.2	1,842.0
75-79 years	2,979.0	3,010.0	2,966.7	2,712.3	2,795.7	2,840.7
80-84 years	3,535.8	3,661.8	3,471.9	3,117.4	2,939.8	3,042.9
85 years and over	5,958.5	5,259.1	4,418.8	4,245.3	4,030.6	3,788.5

See footnotes at end of table.

Table 16. Death rates for ischemic heart disease, according to race, sex, and age: United States, selected years 1968-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1968	1969	1970[1]	1975[1]	1977[1]	1978[1]
Black male:	Number of deaths per 100,000 resident population					
All ages, age adjusted[3]	332.9	323.6	314.5	271.2	264.5	260.6
All ages, crude	290.8	282.0	277.2	244.9	242.5	239.5
Under 25 years	0.8	0.7	0.7	0.6	0.4	0.4
25-29 years	11.8	12.9	11.7	7.4	8.7	8.3
30-34 years	35.4	39.9	32.7	23.9	21.5	22.7
35-39 years	94.0	89.1	83.3	65.3	63.2	56.7
40-44 years	196.5	192.6	191.3	147.8	140.4	138.7
45-49 years	348.8	341.2	333.0	267.6	255.9	231.5
50-54 years	548.8	552.6	516.0	453.7	438.5	440.3
55-59 years	864.7	813.9	803.3	669.2	667.4	663.5
60-64 years	1,302.5	1,198.2	1,157.8	1,000.8	1,044.5	1,028.6
65 years and over	2,560.5	2,518.4	2,479.5	2,207.8	2,119.1	2,087.7
65-69 years	1,737.4	1,711.4	1,664.3	1,275.4	1,188.0	1,174.2
70-74 years	2,397.3	2,301.6	2,364.8	2,253.5	2,088.4	1,962.4
75-79 years	3,039.8	3,106.4	3,085.7	2,986.2	3,189.4	3,272.8
80-84 years	3,777.2	3,913.8	3,778.5	3,318.7	3,205.1	3,409.5
85 years and over	6,302.9	5,602.7	4,743.7	4,558.5	4,348.3	4,024.6
All other female[5]						
All ages, age adjusted[3]	213.0	201.4	194.8	159.1	152.3	146.6
All ages, crude	213.4	204.2	200.4	177.7	177.0	173.0
Under 25 years	0.4	0.5	0.4	0.2	0.3	0.3
25-29 years	3.8	6.0	4.3	2.2	2.0	2.3
30-34 years	17.9	14.0	15.7	8.6	6.5	5.3
35-39 years	40.5	39.2	38.3	26.5	23.8	15.5
40-44 years	97.5	86.1	79.8	52.9	50.8	51.1
45-49 years	166.3	154.3	149.1	111.6	102.0	95.7
50-54 years	287.7	270.0	265.3	192.7	190.0	185.3
55-59 years	474.9	447.0	433.3	349.2	325.7	304.6
60-64 years	809.3	745.3	703.6	570.1	541.2	521.5
65 years and over	1,943.5	1,869.7	1,830.0	1,606.6	1,570.2	1,527.4
65-69 years	1,198.1	1,142.4	1,055.3	749.8	669.0	660.5
70-74 years	1,602.4	1,559.7	1,590.2	1,592.7	1,445.2	1,301.7
75-79 years	2,326.3	2,157.7	2,205.6	2,070.2	2,286.3	2,326.1
80-84 years	3,100.0	2,975.8	2,949.1	2,302.3	2,332.9	2,346.4
85 years and over	5,096.7	4,930.7	4,227.9	3,662.7	3,496.2	3,297.9

See footnotes at end of table.

Table 16. Death rates for ischemic heart disease, according to race, sex, and age: United States, selected years 1968-78--Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1968	1969	1970[1]	1975[1]	1977[1]	1978[1]
Black female:	Number of deaths per 100,000 resident population					
All ages, age adjusted[3]	223.2	212.3	207.1	171.1	164.8	159.7
All ages, crude	227.4	218.8	217.0	195.2	195.6	191.7
Under 25 years	0.5	0.5	0.5	0.2	0.3	0.3
25-29 years	4.1	6.5	4.9	2.5	2.5	2.5
30-34 years	19.8	15.9	17.5	9.9	7.9	6.4
35-39 years	44.0	42.5	43.5	29.6	27.3	17.5
40-44 years	107.2	94.8	89.1	60.7	57.1	58.6
45-49 years	179.4	167.1	163.6	126.6	117.5	109.8
50-54 years	303.7	288.7	285.5	212.6	214.4	208.8
55-59 years	500.0	472.5	459.2	377.1	354.6	333.4
60-64 years	849.5	785.8	747.7	605.0	573.5	559.3
65 years and over	2,012.4	1,947.8	1,920.2	1,696.1	1,658.4	1,617.6
65-69 years	1,250.4	1,200.3	1,111.8	777.3	695.2	682.7
70-74 years	1,678.1	1,627.4	1,683.5	1,731.3	1,556.2	1,395.9
75-79 years	2,411.3	2,258.3	2,320.0	2,282.2	2,581.9	2,673.9
80-84 years	3,158.0	3,120.5	3,110.5	2,439.8	2,483.9	2,542.6
85 years and over	5,269.6	5,070.0	4,418.2	3,843.4	3,663.9	3,463.1

[1] Excludes deaths of nonresidents of the United States.
[2] Includes all races and both sexes.
[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.
[4] Includes black males.
[5] Includes black females.

NOTE: The code numbers for ischemic heart disease are Nos. 410-413, based on the Eighth Revision International Classification of Diseases, Adapted for Use in the United States.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1968-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 519, 721, and 870. Washington. U.S. Government Printing Office, Apr. 1974, Apr. 1978, and Jan. 1980.

Table 17. Death rates for malignant neoplasms, according to race, sex, and age: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	125.4	125.8	125.8	127.0	129.9	130.9	133.0	133.8
All ages, crude	139.8	146.5	149.2	153.8	162.8	171.7	178.7	181.9
Under 25 years	8.5	8.6	8.1	7.5	7.0	5.7	5.6	5.2
Under 1 year	8.7	7.7	7.2	7.1	4.7	4.2	3.8	4.1
1-24 years	8.5	8.6	8.2	7.6	7.1	5.8	5.6	5.3
25-29 years	15.1	14.6	14.7	13.8	12.7	11.4	11.2	10.6
30-34 years	25.3	23.7	23.8	24.0	21.0	19.2	18.4	18.2
35-39 years	45.8	44.5	43.0	42.4	40.9	35.5	34.5	32.9
40-44 years	81.2	79.2	77.6	78.4	76.8	71.2	68.9	68.8
45-49 years	137.0	135.7	135.4	136.1	139.3	136.6	133.5	133.1
50-54 years	216.9	219.7	224.2	227.4	229.6	226.2	229.9	233.7
55-59 years	329.6	327.4	327.8	330.5	357.5	352.7	356.5	354.6
60-64 years	468.5	466.2	478.3	496.1	498.8	519.7	539.6	545.7
65 years and over	851.3	869.5	870.9	887.0	923.4	961.1	988.4	1,002.1
65-69 years	598.8	638.0	634.6	647.9	674.0	670.3	691.9	698.2
70-74 years	830.0	812.7	818.6	829.9	857.1	923.1	931.2	938.8
75-79 years	1,077.6	1,067.1	1,032.9	1,047.0	1,099.5	1,152.9	1,201.4	1,216.0
80-84 years	1,294.2	1,294.9	1,310.1	1,239.2	1,286.1	1,326.0	1,364.9	1,412.0
85 years and over	1,450.8	1,465.3	1,450.0	1,483.6	1,320.7	1,408.8	1,445.6	1,450.5
White male								
All ages, age adjusted[3]	130.9	137.4	141.6	147.8	154.3	157.2	160.0	161.2
All ages, crude	147.2	160.0	166.1	173.7	185.1	194.8	202.5	206.4
Under 25 years	9.7	10.4	9.7	8.8	8.5	6.8	6.9	6.1
Under 1 year	9.6	8.7	7.9	6.2	4.3	4.5	4.5	3.7
1-24 years	9.7	10.4	9.8	8.9	8.6	6.8	7.0	6.2
25-29 years	15.0	15.0	16.4	15.0	13.7	12.5	12.9	11.5
30-34 years	20.6	19.8	21.1	21.1	19.1	18.2	16.2	16.9
35-39 years	32.7	33.0	33.8	35.5	33.6	29.4	29.8	28.5
40-44 years	57.2	56.2	59.7	63.4	65.3	59.6	57.9	57.1
45-49 years	110.4	113.5	114.5	119.5	122.9	124.3	120.1	121.7
50-54 years	194.7	209.5	219.9	222.9	225.4	224.9	228.6	234.4
55-59 years	327.9	340.5	360.1	368.3	397.4	378.2	380.4	380.3
60-64 years	506.0	529.6	559.3	598.1	617.0	619.7	637.5	641.2
65 years and over	986.0	1,045.6	1,073.4	1,144.9	1,221.2	1,296.0	1,330.1	1,350.2
65-69 years	685.5	767.1	780.0	832.0	879.3	887.3	898.7	906.8
70-74 years	965.2	986.4	1,029.9	1,078.3	1,153.8	1,248.8	1,264.1	1,273.1
75-79 years	1,261.4	1,297.0	1,297.9	1,376.3	1,493.3	1,616.8	1,686.6	1,699.3
80-84 years	1,573.4	1,633.0	1,648.4	1,647.5	1,770.2	1,923.3	1,994.1	2,085.9
85 years and over	1,733.9	1,746.9	1,791.4	1,958.7	1,772.2	2,046.6	2,163.1	2,213.6

See footnotes at end of table.

Table 17. Death rates for malignant neoplasms, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
White female	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	119.4	114.3	109.5	107.4	107.6	106.9	108.3	109.0
All ages, crude	139.9	141.0	139.8	141.9	149.4	157.7	164.5	167.7
Under 25 years	7.8	7.4	7.0	6.7	6.0	4.9	4.4	4.4
Under 1 year	7.8	7.2	6.8	6.2	5.4	4.2	3.3	4.7
1-24 years	7.8	7.4	7.0	6.7	6.0	4.9	4.4	4.4
25-29 years	14.8	13.8	12.7	12.4	11.6	10.2	9.5	9.6
30-34 years	27.3	25.7	24.2	25.1	21.8	19.5	19.7	18.5
35-39 years	53.9	51.7	47.9	44.3	44.5	37.7	35.5	33.3
40-44 years	97.4	93.3	86.7	85.0	78.8	75.0	71.0	71.5
45-49 years	153.1	144.8	143.8	140.4	142.6	134.3	131.9	131.5
50-54 years	221.1	213.8	211.6	216.5	214.8	208.1	208.4	211.2
55-59 years	314.5	297.8	281.7	279.0	301.9	302.9	306.0	303.9
60-64 years	419.4	394.5	382.6	380.8	380.0	406.6	427.1	433.5
65 years and over	768.4	747.6	718.4	702.0	714.3	729.2	752.1	762.6
65-69 years	534.2	526.7	500.3	488.3	495.6	486.1	518.8	521.5
70-74 years	733.1	679.5	641.6	623.6	626.4	655.4	654.6	666.8
75-79 years	956.1	912.7	847.8	820.5	836.2	842.2	863.4	878.8
80-84 years	1,153.1	1,114.8	1,107.2	1,005.8	1,011.9	1,019.6	1,050.2	1,071.4
85 years and over	1,348.1	1,357.6	1,304.9	1,257.5	1,126.6	1,165.9	1,181.8	1,178.4
All other male[4]								
All ages, age adjusted[3]	125.8	138.7	154.8	167.3	185.3	199.7	205.4	205.8
All ages, crude	106.1	119.1	134.1	144.3	161.0	175.3	183.2	184.9
Under 25 years	7.2	7.3	6.9	6.4	6.7	5.5	5.4	6.1
Under 1 year	10.4	6.9	6.5	6.1	4.7	3.8	4.0	4.6
1-24 years	7.0	7.3	6.9	6.4	6.8	5.6	5.5	6.2
25-29 years	14.8	12.0	14.7	13.1	11.4	11.6	10.3	10.5
30-34 years	21.5	21.8	21.7	19.5	23.6	18.5	19.3	18.1
35-39 years	39.7	38.3	47.3	48.8	44.1	45.6	42.8	43.3
40-44 years	74.4	84.9	99.3	103.6	108.1	100.5	103.3	100.3
45-49 years	144.6	170.3	169.9	184.6	213.9	208.8	211.8	199.5
50-54 years	282.3	277.6	308.8	327.2	373.7	382.1	388.3	399.2
55-59 years	421.1	447.6	433.7	485.9	553.3	612.7	628.6	610.5
60-64 years	571.6	643.2	710.6	754.8	750.3	863.0	890.5	916.3
65 years and over	691.6	810.4	982.4	1,073.8	1,221.1	1,351.5	1,414.0	1,419.6
65-69 years	579.2	722.0	864.1	901.4	988.8	1,035.1	1,025.5	1,037.0
70-74 years	720.7	818.7	1,021.2	1,119.3	1,266.3	1,503.2	1,572.8	1,541.6
75-79 years	896.9	891.6	1,038.0	1,217.7	1,504.5	1,700.7	1,951.1	1,931.0
80-84 years	751.4	957.1	1,195.5	1,252.4	1,593.8	1,654.7	1,706.5	1,860.4
85 years and over	900.0	1,045.8	1,211.7	1,458.8	1,268.4	1,479.7	1,609.7	1,539.7

See footnotes at end of table.

Table 17. Death rates for malignant neoplasms, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	126.1	—	158.5	174.1	198.0	214.4	221.9	223.7
All ages, crude	106.6	—	136.7	149.2	171.6	188.5	198.2	200.6
Under 25 years	7.1	—	6.7	6.4	6.8	5.7	5.5	6.3
Under 1 year	—	—	6.8	6.0	5.3	3.1	3.0	3.8
1-24 years	—	—	6.7	6.4	6.9	5.8	5.6	6.4
25-29 years	15.3	—	15.0	13.9	12.8	12.5	11.1	10.6
30-34 years	21.1	—	21.7	20.3	25.9	19.9	20.6	19.9
35-39 years	39.3	—	47.7	51.1	46.6	48.1	44.9	45.4
40-44 years	74.3	—	101.2	107.5	115.7	110.3	113.6	107.6
45-49 years	147.5	—	177.9	195.3	229.2	229.3	233.5	220.7
50-54 years	288.5	—	324.4	344.6	404.1	416.1	424.1	433.8
55-59 years	425.2	—	461.4	511.9	595.7	657.8	676.7	661.6
60-64 years	580.1	—	740.1	802.8	802.3	915.8	951.3	983.8
65 years and over	696.1	—	980.4	1,097.4	1,297.6	1,441.6	1,515.5	1,534.3
65-69 years	581.2	—	886.5	939.5	1,049.4	1,086.9	1,062.3	1,090.1
70-74 years	733.3	—	1,017.1	1,136.5	1,349.1	1,621.9	1,707.0	1,679.0
75-79 years	853.5	—	1,012.6	1,247.5	1,580.6	1,875.0	2,254.0	2,247.4
80-84 years		—	1,145.2	1,246.4	1,707.7	1,784.0	1,893.6	2,094.6
85 years and over		—	1,155.2	1,456.7	1,387.0	1,573.6	1,701.7	1,666.2
All other female[5]								
All ages, age adjusted[3]	131.0	124.7	125.0	120.9	117.6	118.9	122.4	121.8
All ages, crude	110.1	108.4	109.8	109.2	110.0	115.5	121.2	122.1
Under 25 years	6.4	5.5	5.9	5.3	4.9	4.6	4.7	3.9
Under 1 year	6.9	5.3	6.5	3.8	3.3	2.7	2.6	3.3
1-24 years	6.4	5.5	5.9	5.4	5.0	4.6	4.7	3.9
25-29 years	19.6	19.9	17.1	15.3	14.4	11.1	11.8	11.9
30-34 years	49.1	38.8	41.5	40.4	25.5	23.9	23.6	24.3
35-39 years	89.1	82.9	72.1	71.4	60.2	51.4	51.2	49.4
40-44 years	155.9	144.8	128.4	119.1	115.2	95.1	95.0	97.3
45-49 years	223.5	226.4	207.1	194.4	173.9	177.9	167.9	161.2
50-54 years	335.7	312.0	300.7	271.2	267.0	251.0	272.8	260.7
55-59 years	446.2	390.7	369.6	343.6	357.1	368.1	372.4	365.1
60-64 years	528.3	446.0	505.4	508.1	422.6	459.3	490.6	494.4
65 years and over	513.5	542.2	591.0	597.0	641.6	683.3	707.6	722.7
65-69 years	429.2	478.0	498.3	341.8	534.0	484.5	502.6	515.9
70-74 years	565.2	551.3	596.6	590.8	672.4	810.3	807.1	787.1
75-79 years	617.7	672.8	676.6	671.3	729.1	917.1	1,024.6	1,057.6
80-84 years	525.0	545.1	757.2	690.9	744.2	769.5	777.9	860.0
85 years and over	719.2	641.2	727.5	942.9	758.9	732.7	768.9	769.0

See footnotes at end of table.

Table 17. Death rates for malignant neoplasms, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black female:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	131.9	---	127.8	124.3	123.5	124.7	129.8	129.2
All ages, crude	111.8	---	113.8	113.6	117.3	123.3	131.0	131.8
Under 25 years	6.5	---	6.0	5.4	5.1	4.7	4.8	4.0
Under 1 year	---	---	6.7	3.0	3.3	2.7	2.2	3.0
1-24 years	---	---	5.9	5.5	5.2	4.8	4.9	4.1
25-29 years	19.7	---	18.4	16.6	15.4	11.2	13.6	12.5
30-34 years	50.6	---	43.1	43.9	27.0	25.4	25.6	26.3
35-39 years	89.2	---	75.9	73.9	64.6	54.8	54.6	53.2
40-44 years	156.6	---	132.4	124.6	124.7	101.4	102.6	105.8
45-49 years	227.3	---	210.7	201.8	183.2	191.3	181.8	173.2
50-54 years	339.5	---	308.4	278.4	280.3	270.6	297.0	280.5
55-59 years	449.9	---	384.8	355.0	370.7	385.5	393.5	387.8
60-64 years	530.1	---	518.5	527.4	444.7	472.7	510.0	521.8
65 years and over	513.0	---	591.4	601.2	668.4	704.4	737.2	750.9
65-69 years	428.4	---	505.0	515.5	558.3	489.0	512.0	523.3
70-74 years	569.5	---	596.5	593.5	702.3	860.1	853.8	823.6
75-79 years	605.3	---	673.4	670.1	762.5	989.8	1,147.1	1,186.9
80-84 years		---	745.1	672.6	764.7	789.0	807.3	904.9
85 years and over		---	728.9	934.8	791.5	733.0	784.9	792.3

[1] Excludes deaths of nonresidents of the United States.

[2] Includes all races and both sexes.

[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

[4] Includes black males.

[5] Includes black females.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for malignant neoplasms are Sixth Revision, Nos. 140-205, for 1950 and 1955; Seventh Revision, Nos. 140-205, for 1960 and 1965; and Eighth Revision, Nos. 140-209, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; 1950 Nonwhite Population by Race, Special report P-E No. 3B. Washington. U.S. Government Printing Office, 1951; General population characteristics, United States summary, 1960 and 1970, U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1, Washington. U.S. Government Printing Office, 1961 and 1972.

Table 18. Death rates for cancer of the respiratory system, according to race, sex, and age: United States, selected years 1950-78

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	12.8	16.0	19.2	23.0	28.4	32.5	34.3	35.4
All ages, crude	14.1	18.2	22.2	26.9	34.2	40.7	44.0	45.8
Under 25 years	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
25-34 years	0.9	1.0	1.1	1.0	1.0	0.9	1.0	0.9
35-44 years	5.1	5.9	7.3	9.3	11.6	11.0	10.6	10.1
45-54 years	22.9	27.4	32.0	38.4	46.2	52.3	55.1	56.6
55-64 years	55.2	68.5	81.5	93.5	116.2	131.9	137.3	142.3
65 years and over	69.0	90.2	111.0	136.1	170.1	202.2	218.9	226.6
65-74 years	69.3	92.9	117.2	142.9	174.6	205.3	219.2	227.3
75-84 years	69.3	88.2	102.9	129.2	175.1	212.4	237.3	246.6
85 years and over	64.0	65.8	79.1	97.1	113.5	142.8	156.3	158.6
White male								
All ages, age adjusted[3]	21.6	28.5	34.6	41.5	49.9	54.6	56.4	57.4
All ages, crude	24.1	32.5	39.6	47.5	58.3	65.8	69.6	71.7
Under 25 years	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
25-34 years	1.2	1.4	1.6	1.4	1.4	1.3	1.2	1.1
35-44 years	7.9	8.9	10.4	12.9	15.4	13.4	12.4	11.7
45-54 years	39.1	47.2	53.0	60.7	67.6	73.0	74.0	75.0
55-64 years	95.9	125.3	149.8	169.7	199.3	206.3	208.5	214.4
65 years and over	116.1	164.4	211.7	270.8	341.7	398.0	423.3	431.9
65-74 years	119.5	172.1	225.1	282.5	344.8	385.2	399.8	407.5
75-84 years	109.1	155.2	191.9	259.2	360.7	452.0	501.1	510.7
85 years and over	102.8	105.1	133.9	181.5	221.8	298.2	340.1	359.3
White female								
All ages, age adjusted[3]	4.6	4.6	5.1	6.8	10.1	13.8	15.6	16.8
All ages, crude	5.4	5.7	6.4	8.6	13.1	18.8	21.7	23.6
Under 25 years	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
25-34 years	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.7
35-44 years	2.2	2.6	3.4	4.5	6.0	7.1	7.1	7.0
45-54 years	6.5	6.8	9.8	14.8	22.1	27.7	30.8	32.7
55-64 years	15.5	14.8	16.7	23.4	39.3	58.9	65.3	69.9
65 years and over	31.6	31.2	30.6	36.7	50.0	69.6	81.5	89.4
65-74 years	27.2	26.7	26.5	33.1	45.4	68.1	80.9	90.5
75-84 years	40.0	39.1	36.5	41.1	56.8	71.3	83.6	91.4
85 years and over	43.9	42.7	45.2	51.2	57.4	73.1	78.8	77.6

See footnotes at end of table.

Table 18. Death rates for cancer of the respiratory system, according to race, sex, and age: United States, selected years 1950-78--Continued

(Data are based on the national vital registration system)

Race, sex, and age	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
	Number of deaths per 100,000 resident population							
All other male[4]								
All ages, age adjusted[3]	17.0	24.0	35.6	42.6	56.3	66.8	71.4	72.2
All ages, crude	14.5	20.6	30.5	36.0	47.6	56.7	61.5	62.5
Under 25 years	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1
25-34 years	2.1	2.2	2.5	1.7	2.4	1.6	2.1	1.5
35-44 years	9.3	12.9	19.8	24.5	29.3	27.3	24.6	24.3
45-54 years	40.5	56.3	70.4	84.7	113.1	122.9	131.2	131.6
55-64 years	79.1	108.0	154.2	171.0	231.5	290.0	305.0	310.1
65 years and over	60.7	93.7	170.2	219.6	285.3	358.4	397.3	402.7
65-74 years	67.6	100.6	183.4	240.2	301.2	378.2	408.4	413.5
75-84 years	48.5	83.2	145.4	177.8	278.7	346.9	412.0	434.3
85 years and over	10.5	45.8	114.8	147.1	158.8	218.8	252.8	211.5
Black male:								
All ages, age adjusted[3]	16.9	---	36.6	44.7	60.8	72.5	78.3	79.1
All ages, crude	14.3	---	31.1	37.6	51.2	61.8	67.8	68.7
Under 25 years	0.2	---	0.1	0.2	0.2	0.1	0.2	0.1
25-34 years	2.1	---	2.6	1.8	2.9	1.6	2.3	1.6
35-44 years	9.4	---	20.7	26.1	32.6	30.7	27.6	26.8
45-54 years	41.1	---	75.0	90.4	123.5	136.9	147.5	147.6
55-64 years	78.8	---	161.8	182.7	250.3	313.2	331.9	339.7
65 years and over	58.9	---	166.4	224.0	302.9	383.3	430.4	434.2
65-74 years	65.2	---	184.6	248.1	322.2	404.7	435.9	439.5
75-84 years	42.4	---	126.3	172.6	290.6	370.7	469.6	493.6
85 years and over		---	110.3	140.0	154.4	220.8	255.0	215.4
All other female[5]								
All ages, age adjusted[3]	4.1	5.2	5.6	7.1	10.4	13.4	15.7	15.9
All ages, crude	3.4	4.5	4.9	6.3	9.5	12.5	14.7	15.2
Under 25 years	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
25-34 years	1.1	0.7	0.7	0.9	0.5	0.7	0.9	0.8
35-44 years	2.6	3.3	3.5	6.1	9.4	8.4	10.5	7.7
45-54 years	8.7	10.9	12.5	16.7	23.3	30.7	36.4	37.5
55-64 years	15.5	19.6	20.2	25.8	35.3	52.3	63.3	64.6
65 years and over	18.3	25.0	27.2	29.3	49.0	62.6	66.9	73.0
65-74 years	17.8	25.2	22.5	29.5	47.7	62.9	70.1	69.9
75-84 years	19.6	25.0	35.8	27.7	53.2	64.4	65.6	89.8
85 years and over	19.2	23.5	44.7	34.7	45.8	55.5	50.8	52.4

See footnotes at end of table.

Table 18. Death rates for cancer of the respiratory system, according to race, sex, and age: United States, selected years 1950-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year							
	1950	1955	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black female:	Number of deaths per 100,000 resident population							
All ages, age adjusted[3]	4.1	---	5.5	7.1	10.9	14.2	16.7	16.9
All ages, crude	3.4	---	4.9	6.3	10.1	13.4	15.8	16.3
Under 25 years	0.1	---	0.1	0.1	0.1	0.0	0.0	0.1
25-34 years	1.2	---	0.8	0.9	0.5	0.7	1.1	1.0
35-44 years	2.7	---	3.4	6.3	10.5	9.5	11.8	8.6
45-54 years	8.8	---	12.8	17.6	25.3	33.6	41.0	41.6
55-64 years	15.3	---	20.7	26.0	36.4	55.0	66.0	68.5
65 years and over	17.2	---	25.3	27.3	50.0	63.2	67.1	73.2
65-74 years	16.4	---	20.7	28.2	49.3	63.7	71.3	70.3
75-84 years	19.2	---	33.1	24.5	52.6	65.5	65.6	92.0
85 years and over		---	44.7	30.4	47.6	53.5	45.4	50.8

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[1] Excludes deaths of nonresidents of the United States.

[2] Includes all races and both sexes.

[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

[4] Includes black males.

[5] Includes black females.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for cancer of the respiratory system are Sixth Revision, Nos. 160-164, for 1950 and 1955; Seventh Revision, Nos. 160-164, for 1960 and 1965; and Eighth Revision, Nos. 160-163, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1950-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; 1950 Nonwhite Population by Race, Special report P-E No. 38. Washington. U.S. Government Printing Office, 1951; General population characteristics, United States summary, 1960 and 1970, U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1, Washington. U.S. Government Printing Office, 1961 and 1972.

Table 19. Death rates for cerebrovascular disease, according to race, sex, and age: United States, selected years 1960-78

(Data are based on the national vital registration system)

Race, sex, and age	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 population					
All ages, age adjusted[3]	79.7	72.7	66.3	54.5	48.2	45.3
All ages, crude	108.0	103.9	101.9	91.1	84.1	80.5
Under 1 year	4.1	4.1	5.0	5.1	5.3	5.5
1-4 years	0.8	0.7	1.0	0.8	0.8	0.8
5-14 years	0.7	0.7	0.7	0.5	0.5	0.6
15-24 years	1.8	1.5	1.6	1.4	1.2	1.1
25-34 years	4.7	4.8	4.5	3.5	3.1	2.7
35-44 years	14.7	15.4	15.6	11.7	10.3	9.8
45-54 years	49.2	45.5	41.6	32.2	28.7	27.4
55-64 years	147.3	127.1	115.8	91.7	79.5	74.1
65-74 years	469.2	415.5	384.1	303.1	259.9	243.6
75-84 years	1,491.3	1,349.0	1,254.2	1,076.3	970.7	910.2
85 years and over	3,680.5	3,717.6	3,014.3	2,654.8	2,425.2	2,281.6
White male						
All ages, age adjusted[3]	80.3	74.2	68.8	57.4	50.5	46.8
All ages, crude	102.7	96.5	93.5	81.1	73.2	68.9
Under 1 year	4.3	4.9	4.5	4.7	4.8	4.2
1-4 years	0.8	0.6	1.2	0.9	0.8	1.0
5-14 years	0.7	0.6	0.8	0.5	0.6	0.7
15-24 years	1.7	1.4	1.6	1.4	1.1	1.2
25-34 years	3.5	3.5	3.2	2.6	2.5	2.0
35-44 years	11.3	10.9	11.8	8.7	7.8	7.6
45-54 years	40.9	37.7	35.6	27.6	24.7	22.4
55-64 years	139.0	126.4	119.9	94.4	80.3	73.3
65-74 years	501.0	446.0	420.0	340.4	290.8	269.9
75-84 years	1,564.8	1,437.7	1,361.6	1,175.7	1,053.3	975.0
85 years and over	3,734.8	3,815.7	3,018.1	2,761.4	2,507.4	2,352.3
White female						
All ages, age adjusted[3]	68.7	61.5	56.2	46.8	41.5	39.3
All ages, crude	110.1	108.0	109.8	102.8	96.5	93.5
Under 1 year	2.6	2.6	3.2	4.0	3.8	3.8
1-4 years	0.5	0.6	0.6	0.7	0.8	0.6
5-14 years	0.6	0.6	0.6	0.5	0.4	0.4
15-24 years	1.4	1.2	1.1	1.1	0.9	1.0
25-34 years	3.4	3.8	3.4	3.0	2.5	2.1
35-44 years	10.1	10.9	11.5	9.3	8.1	7.8
45-54 years	33.8	31.2	30.5	25.1	21.7	21.7
55-64 years	103.0	82.8	78.1	65.6	58.2	54.7
65-74 years	383.3	328.0	303.2	234.8	201.6	190.7
75-84 years	1,444.7	1,280.5	1,176.8	1,007.8	901.1	849.5
85 years and over	3,795.7	3,813.4	3,167.6	2,746.4	2,529.0	2,389.6

See footnotes at end of table.

Table 19. Death rates for cerebrovascular disease, according to race, sex, and age: United States, selected years 1960-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male	Number of deaths per 100,000 population					
All ages, age adjusted[3]	141.2	138.1	124.2	96.5	87.2	83.8
All ages, crude	122.9	120.0	108.7	88.5	81.4	78.4
Under 1 year	8.5	7.5	12.2	*9.3	*8.5	14.6
1-4 years	1.9	*1.6	*1.4	*1.1	*0.9	*1.3
5-14 years	*0.9	1.1	0.8	*0.7	*0.6	*0.6
15-24 years	3.7	2.6	3.0	2.6	1.7	1.4
25-34 years	12.8	12.6	14.6	9.7	9.5	8.2
35-44 years	47.4	58.1	52.7	36.9	34.8	32.7
45-54 years	166.1	161.4	136.2	95.2	89.4	87.8
55-64 years	439.9	401.3	343.4	255.9	223.9	213.5
65-74 years	899.2	873.1	780.0	609.9	514.9	497.2
75-84 years	1,475.2	1,523.6	1,442.6	1,305.2	1,280.6	1,243.1
85 years and over	2,700.0	2,606.7	1,963.0	1,835.8	1,671.7	1,509.2
Black female						
All ages, age adjusted[3]	139.5	126.4	107.9	81.3	73.3	68.7
All ages, crude	127.7	123.1	112.1	92.6	87.1	82.6
Under 1 year	*6.7	*4.9	9.1	*9.0	14.0	11.5
1-4 years	*1.3	*1.5	*1.4	*0.8	*1.0	*0.7
5-14 years	1.0	1.0	0.8	*0.7	*0.5	*0.7
15-24 years	3.4	3.2	3.0	1.9	2.2	1.8
25-34 years	17.4	15.2	14.3	8.7	6.3	6.8
35-44 years	57.4	53.3	49.1	31.1	26.1	22.4
45-54 years	166.2	151.1	119.4	82.4	71.4	65.7
55-64 years	452.0	367.4	272.5	192.9	167.1	158.0
65-74 years	830.5	757.9	673.4	497.3	423.9	385.5
75-84 years	1,413.1	1,386.5	1,337.8	1,190.5	1,221.1	1,188.4
85 years and over	2,578.9	2,739.1	2,222.5	1,804.0	1,601.7	1,496.9

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[1] Excludes deaths of nonresidents of the United States.
[2] Includes all races and both sexes.
[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for cerebrovascular disease are Seventh Revision, Nos. 330-334, for 1960 and 1965, and Eighth Revision, Nos. 430-438, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1960-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; General population characteristics, United States summary, 1960 and 1970. U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1. Washington. U.S. Government Printing Office, 1961 and 1972.

Table 20. Death rates for motor vehicle accidents, according to race, sex, and age: United States, selected years 1960-78

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 population					
All ages, age adjusted[3]	22.5	26.5	27.4	21.3	22.4	23.4
All ages, crude	21.3	25.4	26.9	21.5	22.9	24.0
Under 1 year	8.1	8.6	9.8	8.3	8.0	8.2
1-4 years	10.0	10.8	11.5	10.3	10.1	10.6
5-14 years	7.9	8.9	10.2	8.7	8.6	8.8
15-24 years	38.0	44.2	47.2	39.2	44.1	46.4
25-34 years	24.3	29.7	30.9	25.0	26.1	28.5
35-44 years	19.3	24.6	24.9	18.9	18.9	20.2
45-54 years	21.4	25.6	25.5	17.2	17.7	18.0
55-64 years	25.1	28.8	27.9	18.1	18.9	18.8
65-74 years	31.4	34.3	32.8	22.0	21.0	21.5
75-84 years	41.8	46.5	43.5	32.5	31.6	31.2
85 years and over	37.9	40.0	34.2	24.2	25.5	24.0
White male						
All ages, age adjusted[3]	34.0	39.4	40.1	31.7	33.2	35.2
All ages, crude	31.5	37.2	39.1	32.2	34.1	36.2
Under 1 year	8.8	10.0	9.1	8.0	8.6	7.5
1-4 years	11.3	11.4	12.2	10.9	10.3	11.0
5-14 years	10.3	11.5	12.6	10.8	10.4	11.3
15-24 years	62.7	71.4	75.2	64.6	71.0	75.4
25-34 years	38.6	45.8	47.0	38.2	40.2	44.5
35-44 years	28.4	35.3	35.2	27.7	27.3	29.7
45-54 years	29.7	35.7	34.6	24.0	24.9	25.3
55-64 years	34.4	39.3	39.0	24.4	25.6	25.4
65-74 years	45.5	48.6	46.2	30.3	28.8	29.4
75-84 years	66.8	74.8	69.2	52.3	49.6	48.5
85 years and over	61.9	74.4	65.5	48.8	49.7	52.6
White female						
All ages, age adjusted[3]	11.1	13.6	14.4	10.9	12.2	12.6
All ages, crude	11.2	13.9	14.8	11.4	12.7	13.1
Under 1 year	7.5	7.9	10.2	8.4	7.8	8.5
1-4 years	8.3	8.9	9.6	8.2	8.9	8.6
5-14 years	5.3	6.0	6.9	6.1	6.6	6.4
15-24 years	15.6	19.5	22.7	18.4	22.7	23.8
25-34 years	9.0	11.8	12.7	10.5	11.1	12.2
35-44 years	8.9	12.3	12.3	8.6	9.6	9.6
45-54 years	11.4	14.3	14.3	8.9	9.5	9.6
55-64 years	15.3	17.8	16.1	10.5	11.1	11.2
65-74 years	19.3	22.7	22.1	14.4	14.7	14.9
75-84 years	23.8	28.2	28.1	20.9	21.0	20.4
85 years and over	22.2	21.4	18.1	13.0	15.6	12.5

See footnotes at end of table.

Table 20. Death rates for motor vehicle accidents, according to race, sex, and age: United States, selected years 1960-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male	Number of deaths per 100,000 population					
All ages, age adjusted[3]	38.2	45.2	50.1	35.8	35.3	35.0
All ages, crude	33.1	39.1	44.2	32.7	32.9	32.6
Under 1 year	*6.8	*5.6	10.6	*8.8	*7.7	*6.7
1-4 years	12.7	18.1	16.9	16.4	14.3	13.9
5-14 years	10.4	12.8	16.1	13.0	12.7	11.0
15-24 years	46.4	54.0	58.1	34.0	39.0	38.4
25-34 years	51.0	62.7	70.4	51.5	50.6	49.6
35-44 years	43.6	53.7	59.5	43.2	39.3	42.6
45-54 years	48.1	52.2	61.4	41.9	39.3	38.8
55-64 years	47.3	58.3	62.1	45.1	46.0	42.0
65-74 years	46.1	51.7	54.9	49.0	39.5	40.4
75-84 years	51.8	50.3	51.5	49.7	55.0	66.5
85 years and over	*58.6	*53.3	45.7	*37.7	35.0	33.8
Black female						
All ages, age adjusted[3]	10.0	12.7	13.8	9.4	8.9	9.8
All ages, crude	9.7	12.1	13.4	9.2	8.8	9.7
Under 1 year	8.1	*6.7	11.9	*8.1	*7.0	11.1
1-4 years	8.8	10.5	12.6	11.1	9.8	13.2
5-14 years	5.9	7.0	9.3	5.9	5.4	5.7
15-24 years	9.9	14.5	13.4	8.8	10.1	10.9
25-34 years	9.8	13.2	13.3	8.8	9.0	9.5
35-44 years	11.0	13.8	16.1	9.5	8.3	9.4
45-54 years	11.8	15.4	16.4	12.1	9.2	10.7
55-64 years	14.0	14.7	17.1	11.9	11.9	12.9
65-74 years	14.2	17.3	16.3	11.4	8.9	8.7
75-84 years	8.8	12.0	14.3	16.0	14.3	13.1
85 years and over	*21.1	*13.0	*15.5	*8.1	*10.1	*5.4

[1] Excludes deaths of nonresidents of the United States.

[2] Includes all races and both sexes.

[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for motor vehicle accidents are Seventh Revision, Nos. E810-E835, for 1960 and 1965, and Eighth Revision, Nos. E810-E823, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1960-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; General population characteristics, United States summary, 1960 and 1970. U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1. Washington. U.S. Government Printing Office, 1961 and 1972.

Table 21. Death rates for homicide, according to race, sex, and age: United States, selected years 1960-78

(Data are based on the national vital registration system)

Race, sex, and age	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 population					
All ages, age adjusted[3]	5.2	6.2	9.1	10.5	9.6	9.6
All ages, crude	4.7	5.5	8.3	10.0	9.2	9.4
Under 1 year	4.8	5.6	4.3	5.8	5.6	5.0
1-4 years	0.7	1.2	1.9	2.5	2.7	2.6
5-14 years	0.5	0.6	0.9	1.0	1.2	1.3
15-24 years	5.9	6.8	11.7	13.7	12.7	13.2
25-34 years	9.7	11.8	16.6	18.4	16.5	16.9
35-44 years	8.1	9.9	13.7	15.8	14.5	14.0
45-54 years	6.2	7.0	10.1	11.6	9.8	9.9
55-64 years	4.2	5.0	7.1	8.0	7.4	6.7
65-74 years	2.8	3.2	5.0	6.0	5.2	5.0
75-84 years	2.4	2.8	4.0	5.7	4.9	4.7
85 years and over	2.4	2.4	4.2	4.6	4.7	4.4
White male						
All ages, age adjusted[3]	3.9	4.8	7.3	9.4	8.8	9.2
All ages, crude	3.6	4.4	6.8	9.1	8.7	9.2
Under 1 year	3.8	5.4	2.9	5.0	4.2	3.5
1-4 years	0.6	1.0	1.4	1.9	1.9	1.7
5-14 years	0.4	0.5	0.5	0.8	0.9	1.0
15-24 years	4.4	4.9	7.9	11.2	11.5	12.4
25-34 years	6.2	7.8	13.0	15.6	14.4	15.3
35-44 years	5.5	7.3	11.0	14.4	13.8	13.9
45-54 years	5.0	6.1	9.0	11.3	9.7	10.4
55-64 years	4.3	5.2	7.7	8.9	7.8	7.6
65-74 years	3.4	3.5	5.6	7.1	5.7	5.5
75-84 years	2.7	3.6	5.1	6.6	5.4	4.7
85 years and over	*2.7	*3.0	6.4	5.6	6.0	6.4
White female						
All ages, age adjusted[3]	1.5	1.7	2.2	2.9	2.9	2.9
All ages, crude	1.4	1.6	2.1	2.9	2.9	2.9
Under 1 year	3.5	3.7	2.9	3.5	4.1	3.6
1-4 years	0.5	0.8	1.2	1.2	1.6	1.4
5-14 years	0.3	0.4	0.5	0.8	0.9	0.9
15-24 years	1.5	1.8	2.7	4.0	3.9	4.1
25-34 years	2.0	2.5	3.4	4.1	3.9	4.0
35-44 years	2.2	2.3	3.2	4.0	4.0	3.6
45-54 years	1.9	2.0	2.2	3.0	2.8	3.0
55-64 years	1.5	1.6	2.0	2.4	2.5	2.0
65-74 years	1.1	1.3	1.7	2.3	2.3	2.1
75-84 years	1.2	1.3	2.5	3.8	3.1	3.4
85 years and over	*1.5	*1.3	*1.9	3.1	3.2	3.0

See footnotes at end of table.

Table 21. Death rates for homicide, according to race, sex, and age: United States, selected years 1960-78—Continued

(Data are based on the national vital registration system)

Race, sex, and age	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male	Number of deaths per 100,000 population					
All ages, age adjusted[3]	44.9	54.5	82.1	80.6	67.7	65.6
All ages, crude	36.6	43.3	67.5	69.5	59.7	58.6
Under 1 year	10.3	11.9	14.3	15.0	17.0	13.3
1-4 years	*1.7	2.7	5.1	7.9	8.8	8.6
5-14 years	1.4	2.2	4.2	2.7	3.2	3.4
15-24 years	46.4	57.1	102.5	90.5	72.2	72.5
25-34 years	92.0	111.4	158.5	162.6	135.5	134.6
35-44 years	77.5	93.5	126.2	125.5	110.6	104.3
45-54 years	54.8	63.7	100.6	99.0	76.0	73.5
55-64 years	31.8	39.2	59.8	62.9	57.5	50.1
65-74 years	19.1	27.3	40.6	40.1	35.7	32.2
75-84 years	16.1	17.8	18.9	26.7	27.2	26.6
85 years and over	*10.3	*16.7	*19.6	*22.6	*26.7	*7.7
Black female						
All ages, age adjusted[3]	11.8	12.3	15.0	16.3	13.8	13.5
All ages, crude	10.4	10.5	13.2	15.0	13.1	13.0
Under 1 year	13.8	12.3	10.7	14.0	11.4	13.7
1-4 years	*1.7	2.8	6.3	6.6	6.7	7.6
5-14 years	1.0	1.0	2.0	2.0	2.6	2.7
15-24 years	11.9	12.3	17.7	20.6	18.7	17.7
25-34 years	24.9	25.3	25.6	28.3	25.1	24.0
35-44 years	20.5	22.4	25.1	24.5	18.3	18.8
45-54 years	12.7	13.0	17.5	17.9	12.1	10.7
55-64 years	6.8	6.9	8.1	10.7	10.1	9.3
65-74 years	*3.3	*2.8	7.7	9.0	6.9	8.6
75-84 years	*2.5	*4.0	*5.7	8.4	9.0	8.4
85 years and over	*2.6	*4.3	*9.9	*7.1	*3.4	*8.5

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[1] Excludes deaths of nonresidents of the United States.

[2] Includes all races and both sexes.

[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for homicide are Seventh Revision, Nos. E964, E980-E985, for 1960 and 1965, and Eighth Revision, Nos. E960-E969, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1960-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; General population characteristics, United States summary, 1960 and 1970. U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1. Washington. U.S. Government Printing Office, 1961 and 1972.

Table 22. Death rates for suicide, according to race, sex, and age: United States, selected years 1960-78

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Total[2]	Number of deaths per 100,000 population					
All ages, age adjusted[3]	10.6	11.4	11.8	12.6	12.9	12.0
All ages, crude	10.6	11.1	11.6	12.7	13.3	12.5
Under 1 year	...	...	...	...	...	...
1-4 years	...	...	...	...	...	...
5-14 years	0.3	0.3	0.3	0.5	0.5	0.4
15-24 years	5.2	6.2	8.8	11.8	13.6	12.4
25-34 years	10.0	12.2	14.1	16.4	17.7	16.7
35-44 years	14.2	16.7	16.9	17.4	16.8	15.8
45-54 years	20.7	20.9	20.0	20.1	18.9	17.1
55-64 years	23.7	23.7	21.4	20.0	19.4	18.1
65-74 years	23.0	21.2	20.8	19.7	20.1	18.8
75-84 years	27.9	24.7	21.2	20.6	21.5	22.6
85 years and over	26.0	24.2	19.0	18.1	17.3	18.6
White male						
All ages, age adjusted[3]	17.5	17.7	18.2	19.8	20.6	19.2
All ages, crude	17.6	17.5	18.0	20.1	21.4	20.2
Under 1 year	...	...	...	...	...	...
1-4 years	...	...	...	...	...	...
5-14 years	0.5	0.5	0.5	0.8	1.0	0.7
15-24 years	8.6	9.5	13.9	19.6	22.9	20.8
25-34 years	14.9	17.7	19.9	24.4	26.7	25.8
35-44 years	21.9	23.5	23.3	24.5	24.7	22.5
45-54 years	33.7	31.1	29.5	29.7	27.3	24.7
55-64 years	40.2	39.5	35.0	32.1	30.9	29.3
65-74 years	42.0	38.5	38.7	36.1	37.5	35.5
75-84 years	55.7	50.8	45.5	44.8	48.4	50.9
85 years and over	61.3	59.0	45.8	50.3	49.9	53.1
White female						
All ages, age adjusted[3]	5.3	6.7	7.2	7.3	7.2	6.6
All ages, crude	5.3	6.6	7.1	7.4	7.3	6.9
Under 1 year	...	...	...	...	...	...
1-4 years	...	...	...	...	...	...
5-14 years	*0.1	*0.1	0.1	0.2	0.2	0.2
15-24 years	2.3	2.9	4.2	4.9	5.5	5.0
25-34 years	5.8	7.6	9.0	8.9	9.3	8.5
35-44 years	8.1	12.0	13.0	12.6	11.2	10.9
45-54 years	10.9	13.8	13.5	13.8	13.6	12.1
55-64 years	10.9	12.2	12.3	11.7	11.2	10.3
65-74 years	8.8	9.8	9.6	9.5	9.4	8.4
75-84 years	9.2	8.0	7.2	7.8	7.5	7.7
85 years and over	6.1	6.5	5.8	4.7	4.4	5.2

See footnotes at end of table.

Table 22. Death rates for suicide, according to race, sex, and age: United States, selected years 1960-78--Continued

(Data are based on the national vital registration system)

Race, sex, and age	Year					
	1960	1965	1970[1]	1975[1]	1977[1]	1978[1]
Black male	Number of deaths per 100,000 population					
All ages, age adjusted[3]	7.8	9.1	9.9	11.6	11.9	12.1
All ages, crude	6.4	7.3	8.0	10.0	10.7	10.8
Under 1 year	...	...	...	...	...	...
1-4 years	...	...	...	...	...	...
5-14 years	*0.1	*0.2	*0.1	*0.1	*0.3	*0.3
15-24 years	4.1	8.1	10.5	12.9	13.3	13.4
25-34 years	12.4	13.4	19.2	24.3	26.3	24.4
35-44 years	12.8	14.4	12.6	16.0	14.8	16.9
45-54 years	10.8	13.0	13.8	12.1	11.5	13.8
55-64 years	16.2	12.8	10.6	10.8	12.6	10.2
65-74 years	11.3	11.4	8.7	11.2	10.4	11.1
75-84 years	*6.6	13.4	*8.9	13.6	13.1	14.9
85 years and over	*6.9	*10.0	*8.7	*3.8	*11.7	*7.7
Black female						
All ages, age adjusted[3]	1.9	2.5	2.9	3.0	3.3	3.0
All ages, crude	1.6	2.1	2.6	2.7	3.0	2.8
Under 1 year	...	...	...	...	...	...
1-4 years	...	...	...	...	...	...
5-14 years	*0.0	*0.1	*0.2	*0.1	*0.2	*0.2
15-24 years	1.3	*2.7	3.8	3.3	3.8	2.7
25-34 years	3.0	5.1	5.7	5.6	6.2	5.6
35-44 years	3.0	3.1	3.7	3.9	4.8	4.6
45-54 years	3.1	4.2	3.7	4.0	4.0	4.2
55-64 years	*3.0	*2.0	*2.0	3.5	3.5	3.2
65-74 years	*2.3	*0.9	*2.9	*3.0	*1.5	*2.2
75-84 years	*1.3	*2.0	*1.7	*1.5	*2.2	*3.3
85 years and over	-	*2.2	*2.8	-	*0.8	*0.8

[1] Excludes deaths of nonresidents of the United States.

[2] Includes all races and both sexes.

[3] Age adjusted by the direct method to the total population of the United States as enumerated in 1940, using 11 age groups.

NOTE: The International Classification of Diseases, Adapted for Use in the United States revisions and code numbers for suicide are Seventh Revision, Nos. E963, E970-E979, for 1960 and 1965, and Eighth Revision, Nos. E950-E959, for 1970-78.

SOURCES: National Center for Health Statistics: Vital Statistics of the United States, Vol. II, 1960-78. Public Health Service. Washington. U.S. Government Printing Office; Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics; U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 310, 519, 721, and 870. Washington. U.S. Government Printing Office, June 1965, Apr. 1974, Apr. 1978, and Jan. 1980; General population characteristics, United States summary, 1960 and 1970. U.S. Census of Population. Final reports PC(1)-1B and PC(1)-B1. Washington. U.S. Government Printing Office, 1961 and 1972.

Table 23. Infants weighing 2,500 grams or less at birth, according to race, geographic division, and State: United States average annual 1966-68, 1971-73, and 1976-78

(Data are based on the national vital registration system)

Geographic division and State	1966-68			1971-73			1976-78		
	Total	White	All other[1]	Total[2]	White	Black	Total[2]	White	Black
	Infants weighing 2,500 grams or less at birth per 100 total live births								
United States	8.3	7.1	13.7	7.6	6.5	13.4	7.1	6.0	12.9
New England	7.9	7.5	14.0	7.1	6.7	13.4	6.4	6.0	12.5
Maine	7.6	7.5	11.9	6.4	6.4	*5.5	5.6	5.5	*6.8
New Hampshire	7.2	7.2	*9.2	6.8	6.7	*8.9	5.9	5.9	*6.0
Vermont	7.9	8.0	*2.2	7.0	7.0	*3.3	6.5	6.4	*15.4
Massachusetts	7.8	7.5	13.3	7.1	6.7	13.3	6.4	6.1	11.4
Rhode Island	8.2	7.9	14.3	7.1	6.6	14.5	6.7	6.2	13.4
Connecticut	8.3	7.5	15.0	7.3	6.6	13.4	6.9	6.0	13.6
Middle Atlantic	8.6	7.4	15.3	8.0	6.7	14.1	7.5	6.2	13.4
New York	9.0	7.7	15.0	8.2	6.9	13.9	7.9	6.5	13.2
New Jersey	8.5	7.1	15.0	8.0	6.5	14.4	7.5	6.0	13.5
Pennsylvania	8.1	7.0	16.5	7.6	6.6	14.4	7.0	6.0	13.7
East North Central	7.8	6.8	14.4	7.4	6.3	13.8	7.0	5.8	13.4
Ohio	7.9	7.0	14.9	7.4	6.4	13.7	6.9	5.9	13.2
Indiana	7.6	7.0	14.1	6.8	6.2	12.0	6.5	5.8	12.0
Illinois	8.2	6.8	14.2	7.9	6.2	14.0	7.5	5.8	13.7
Michigan	7.9	6.8	14.6	7.8	6.3	14.4	7.3	6.0	13.6
Wisconsin	6.8	6.5	12.7	6.2	5.8	12.8	5.6	5.2	12.4
West North Central	6.8	6.4	12.8	6.5	6.0	13.0	6.0	5.5	13.0
Minnesota	6.3	6.2	10.4	5.9	5.7	12.9	5.3	5.2	11.8
Iowa	6.2	6.1	12.6	6.1	5.9	13.3	5.5	5.4	11.3
Missouri	7.7	6.5	14.2	7.4	6.3	13.3	7.1	5.9	13.5
North Dakota	6.3	6.3	7.0	5.8	5.6	9.2	5.2	5.0	12.5
South Dakota	6.4	6.2	7.3	6.0	5.8	13.9	5.4	5.2	10.6
Nebraska	6.7	6.4	12.8	6.4	6.1	12.5	5.8	5.4	*12.4
Kansas	7.1	6.7	12.6	6.6	6.1	12.1	6.4	5.9	12.7
South Atlantic	9.3	7.5	13.9	8.5	6.7	13.3	8.1	6.2	12.8
Delaware	8.7	6.9	16.0	7.9	6.2	14.1	7.8	6.0	13.8
Maryland	9.1	7.4	14.9	7.9	6.2	13.0	7.9	5.8	13.0
District of Columbia	13.6	7.3	15.0	12.8	6.7	13.8	12.8	7.0	14.0
Virginia	8.8	7.3	13.6	8.0	6.6	13.1	7.4	5.9	12.2
West Virginia	8.3	8.0	14.5	7.4	7.2	12.2	6.9	6.8	11.5
North Carolina	9.5	7.7	13.7	8.8	6.9	13.4	8.1	6.2	12.5
South Carolina	9.7	7.6	13.0	8.8	6.5	12.6	8.9	6.1	13.1
Georgia	9.5	7.3	13.7	9.3	7.0	13.8	8.7	6.3	13.0
Florida	9.1	7.4	13.7	8.3	6.6	13.1	7.9	6.2	12.5
East South Central	8.9	7.4	12.9	8.4	6.7	12.7	8.0	6.4	12.3
Kentucky	8.3	7.8	13.9	7.5	7.0	13.0	7.1	6.5	12.8
Tennessee	8.9	7.3	14.8	8.2	6.8	13.4	8.0	6.6	13.0
Alabama	9.0	7.2	12.3	8.5	6.5	12.5	8.2	6.1	12.0
Mississippi	9.7	7.0	12.2	9.2	6.4	12.4	8.9	6.1	12.0

See footnotes at end of table.

Table 23. Infants weighing 2,500 grams or less at birth, according to race, geographic division, and State: United States average annual 1966-68, 1971-73, and 1976-78—Continued

(Data are based on the national vital registration system)

Geographic division and State	1966-68			1971-73			1976-78		
	Total	White	All other[1]	Total[2]	White	Black	Total[2]	White	Black
	Infants weighing 2,500 grams or less at birth per 100 total live births								
West South Central	8.7	7.2	13.9	8.0	6.7	13.4	7.7	6.4	13.1
Arkansas	8.8	7.4	12.3	7.9	6.5	12.2	7.9	6.3	12.7
Louisiana	10.1	7.0	14.7	9.1	6.5	13.3	8.9	6.3	12.9
Oklahoma	7.7	7.1	11.3	7.5	6.8	14.0	7.2	6.6	13.2
Texas	8.4	7.3	14.0	7.8	6.7	13.7	7.4	6.3	13.3
Mountain	8.7	8.4	11.1	7.7	7.5	13.8	6.9	6.7	13.3
Montana	7.7	7.6	8.6	7.4	7.3	16.4	6.3	6.1	13.0
Idaho	7.0	6.9	11.0	6.5	6.4	*4.2	5.6	5.6	*8.5
Wyoming	9.6	9.3	14.3	8.9	8.9	18.1	8.3	8.1	17.3
Colorado	10.3	10.0	15.9	9.3	9.0	15.1	8.4	8.1	14.7
New Mexico	9.9	9.8	11.0	9.0	9.0	14.5	8.4	8.4	13.6
Arizona	7.8	7.4	9.5	6.7	6.5	11.1	6.2	6.0	11.8
Utah	7.1	7.0	10.2	6.0	5.9	12.6	5.5	5.5	10.9
Nevada	9.5	8.9	13.2	8.6	7.6	15.7	7.5	6.7	13.7
Pacific	7.3	6.7	11.2	6.5	5.9	12.2	6.1	5.4	11.5
Washington	6.8	6.5	10.5	6.2	5.9	11.3	5.5	5.2	9.8
Oregon	6.4	6.2	10.5	5.8	5.6	13.6	5.3	5.1	11.5
California	7.4	6.8	11.8	6.6	5.9	12.2	6.2	5.5	11.6
Alaska	7.2	6.4	8.8	6.4	5.8	11.5	5.4	5.0	8.9
Hawaii	9.2	7.4	9.8	7.8	6.2	8.1	7.4	6.0	8.9

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[1] Data by birth weight for the black population not available for these years. In the Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central Divisions, more than 95 percent of the births in the "all other" racial category were black. However, in the Mountain and Pacific States, most of the births in the "all other" racial category were not black. Overall, 91 percent of the births in the "all other" racial category were black for the 3-year period. Based on more recent data, infants other than black of the "all other" racial category have a much lower low-birth-weight ratio than black infants. In fact, this other group's ratio is similar to the white ratio. Therefore, combining the black and other groups distorts the picture, making a trend difficult to interpret.

[2] Includes all other races not shown separately.

SOURCE: National Center for Health Statistics: Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

Table 24. Live births, according to race and selected characteristics: United States, 1970-78

(Data are based on the national vital registration system)

Race and selected characteristics	Year								
	1970	1971	1972	1973	1974	1975	1976	1977	1978
TOTAL[1]	Percent of live births								
Birthweight[2]									
2,500 grams or less	7.94	7.66	7.67	7.55	7.42	7.39	7.26	7.07	7.11
1,500 grams or less	1.17	1.14	1.18	1.16	1.14	1.16	1.15	1.13	1.17
Education of mother									
Less than 12 years	30.8	30.9	31.0	30.6	29.2	28.6	27.4	26.2	26.1
16 years or more	8.6	8.7	9.2	10.0	10.9	11.4	12.1	12.6	13.1
Prenatal care began									
1st trimester	68.0	68.6	69.5	70.8	72.1	72.4	73.5	74.1	74.9
3rd trimester or no prenatal care	7.9	7.3	6.9	6.6	6.2	6.0	5.7	5.6	5.4
WHITE									
Birthweight[2]									
2,500 grams or less	6.84	6.57	6.49	6.41	6.30	6.26	6.13	5.93	5.94
1,500 grams or less	0.95	0.92	0.94	0.94	0.92	0.92	0.91	0.89	0.91
Education of mother									
Less than 12 years	27.0	27.2	27.2	26.7	25.5	25.0	23.9	22.9	23.4
16 years or more	9.5	9.6	10.2	11.1	12.1	12.7	13.5	14.0	14.4
Prenatal care began									
1st trimester	72.4	72.9	73.6	74.9	75.9	75.9	76.8	77.3	78.2
3rd trimester or no prenatal care	6.2	5.8	5.6	5.3	5.1	5.0	4.8	4.7	4.5
BLACK									
Birthweight[2]									
2,500 grams or less	13.86	13.35	13.58	13.25	13.14	13.09	12.97	12.79	12.85
1,500 grams or less	2.40	2.29	2.38	2.28	2.27	2.37	2.40	2.38	2.43
Education of mother									
Less than 12 years	51.0	49.8	49.4	48.5	46.4	45.1	43.3	41.0	38.5
16 years or more	2.8	3.1	3.2	3.5	4.1	4.4	4.8	5.2	5.7
Prenatal care began									
1st trimester	44.4	46.6	49.0	51.5	53.9	55.8	57.7	59.0	60.2
3rd trimester or no prenatal care	16.6	14.6	13.3	12.4	11.4	10.5	9.9	9.6	9.3

[1] Includes all other races not shown separately.
[2] Since some of the birthweight figures are less than 1 percent, all figures for this category were carried to 2 decimal places.

NOTE: Figures for 1970 and 1971 are based on a 50-percent sample; for 1972-78, they are based on 100 percent of births in selected States and on a 50-percent sample of births in all other States. Percents are based only on records for which characteristic is stated.

SOURCE: National Center for Health Statistics: Vital Statistics of the United States, Vol. 1, for data years 1970-1977, Public Health Service. Washington. U.S. Government Printing Office; for 1978, Public Health Service. To be published.

Table 25. Vaccination status of children 1-4 years of age, according to race and standard metropolitan statistical area (SMSA) component: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Year, race, and SMSA component	Vaccination				
	Measles	Rubella	DTP[1,2]	Polio[2]	Mumps
	Percent of population				
1974					
Total	64.5	59.8	73.9	63.1	39.4
Race					
White	66.8	61.0	76.8	66.7	41.1
All other	53.1	53.6	59.6	45.0	31.2
SMSA component					
Central city	62.5	61.1	69.5	60.0	37.9
Poverty area[3]	52.9	55.3	57.3	51.5	28.9
Nonpoverty area	66.0	63.2	74.0	63.1	41.2
Remaining areas in SMSA	68.5	62.3	77.9	68.1	43.9
Non-SMSA	61.6	55.5	73.2	60.0	35.4
1979					
Total	63.5	62.7	65.4	59.1	55.4
Race					
White	66.2	64.7	69.0	63.6	57.5
All other	51.2	53.7	49.2	38.9	46.0
SMSA component					
Central city	57.8	58.0	58.0	52.1	49.5
Poverty area[3]	47.7	52.8	48.6	44.5	40.8
Nonpoverty area	60.9	59.6	61.0	54.4	52.1
Remaining areas in SMSA	65.6	65.1	69.1	61.6	57.2
Non-SMSA	66.1	64.1	67.7	62.6	58.5

[1] Diphtheria-tetanus-pertussis.
[2] Three doses or more.
[3] Geographic areas where 20 percent or more of the population falls below the poverty level as defined by the Bureau of the Census in 1970.

NOTE: Beginning in 1976, the category "don't know" was added to response categories. Prior to 1976, the lack of this option resulted in some forced positive answers particularly for vaccinations requiring multiple dose schedules, i.e., polio and DTP.

SOURCE: Center for Disease Control: United States Immunization Survey, 1979. Public Health Service, DHHS, Atlanta, Ga. To be published.

Table 26. Selected notifiable disease rates, according to disease: United States, selected years 1950-79

(Data are based on reporting by State health departments)

Disease	Year							
	1950	1955	1960	1965	1970	1975	1978	1979
	Number of cases per 100,000 population							
Chickenpox	(1)	(1)	(1)	(1)	(1)	78.11	80.42	102.93
Diphtheria	3.83	1.21	0.51	0.08	0.21	0.14	0.03	0.03
Hepatitis A	(1)	19.45	23.15	17.49	27.87	16.82	13.53	13.82
Hepatitis B					4.08	6.30	6.89	7.02
Measles (rubeola)	211.01	337.88	245.42	135.33	23.23	11.44	12.32	6.18
Mumps	(1)	(1)	(1)	(1)	55.55	27.99	7.81	6.55
Pertussis (whooping cough)	79.82	38.21	8.23	3.51	2.08	0.82	0.95	0.74
Poliomyelitis, total	22.02	17.64	1.77	0.04	0.02	0.00	0.01	0.02
Paralytic		8.43	1.40	0.03	0.02	0.00	0.00	0.01
Rubella (German measles)	(1)	(1)	(1)	(1)	27.75	7.81	8.38	5.36
Salmonellosis, excluding typhoid fever	(1)	3.32	3.85	8.87	10.84	10.61	13.49	15.06
Shigellosis	15.45	8.47	6.94	5.70	6.79	7.78	8.95	9.15
Tuberculosis[2]	80.50	46.60	30.83	25.33	18.22	15.95	13.08	12.57
Venereal diseases:[3]								
Syphilis[4]	146.02	76.15	68.78	58.81	45.46	38.00	30.00	30.68
Primary and secondary	16.73	4.02	9.06	12.16	10.94	12.09	10.00	11.38
Early latent	39.71	12.48	10.11	9.10	8.11	12.57	9.07	9.40
Late and late latent	76.22	53.83	45.91	35.09	25.05	12.81	10.64	9.70
Congenital	8.97	3.33	2.48	1.86	0.97	0.43	0.20	0.20
Gonorrhea	192.45	146.96	145.33	169.36	298.52	472.91	468.30	459.44
Chancroid	3.34	1.65	0.94	0.51	0.70	0.33	0.24	0.38
Granuloma inguinale	1.19	0.30	0.17	0.08	0.06	0.03	0.03	0.03
Lymphogranuloma venereum	0.95	0.47	0.47	0.46	0.30	0.17	0.13	0.11

[1] Not reported nationally.

[2] Data subsequent to 1974 are not comparable to prior years because of changes in reporting criteria that became effective in 1975.

[3] Newly reported civilian cases.

[4] Includes stage of syphilis not stated.

NOTE: Rates greater than 0 but less than 0.005 are shown as 0.00. The total resident population was used to calculate all rates except venereal diseases, for which the civilian resident population was used.

SOURCES: Center for Disease Control: Reported morbidity and mortality in the United States, 1979, Morbidity and Mortality Weekly Report 28(54). Public Health Service, Atlanta, Ga., Sept. 1980; National Center for Health Statistics: Data computed by the Division of Analysis from data compiled by the Center for Disease Control; Venereal Disease Control Division, Center for Prevention Services, Center for Disease Control: Selected data.

Table 27. Self-assessment of health and limitation of activity, according to selected characteristics: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Characteristic	Self-assessment of health as fair or poor		With limitation of activity							
			Total		Limited but not in major activity		Limited in amount or kind of major activity		Unable to carry on major activity	
	1974	1979	1974	1979	1974	1979	1974	1979	1974	1979
	Percent of population									
Total[1,2,3]	13.2	12.4	13.9	13.9	3.5	3.6	7.1	6.9	3.2	3.4
Age										
Under 17 years	4.6	4.8	3.7	3.9	1.8	1.8	1.7	1.9	0.2	0.2
17-44 years	9.4	8.8	8.8	8.8	3.2	3.3	4.6	4.4	1.0	1.1
45-64 years	23.8	21.9	24.1	24.1	5.2	5.4	13.3	12.1	5.6	6.5
65 years and over	33.9	31.4	45.9	46.0	6.6	6.9	22.1	22.3	17.1	16.9
Sex[1]										
Male	12.6	11.7	14.7	14.8	3.6	3.6	5.7	5.5	5.4	5.7
Female	13.8	13.0	13.2	13.2	3.3	3.6	8.3	8.0	1.5	1.6
Race[1]										
White	12.1	11.4	13.5	13.6	3.5	3.7	6.9	6.8	3.0	3.2
Black	22.1	20.3	17.4	17.7	2.8	3.2	9.2	8.7	5.5	*5.7
Family income[1,4]										
Less than $7,000	24.7	22.5	22.8	22.0	4.3	4.3	11.9	10.7	*6.6	*7.0
$7,000-$9,999	17.9	16.9	16.5	17.8	3.6	3.7	8.2	8.9	*4.6	*5.3
$10,000-$14,999	14.6	12.5	14.1	14.0	3.4	3.7	7.2	6.8	*3.3	*3.4
$15,000-$24,999	10.5	9.5	11.9	11.7	3.2	3.5	6.5	6.1	*2.2	*2.1
$25,000 or more	6.9	6.7	10.2	10.0	3.4	3.4	5.0	4.7	*1.8	*1.9
Geographic region[1]										
Northeast	11.5	11.0	13.0	13.0	3.5	3.3	6.6	6.5	*2.9	*3.2
North Central	11.9	11.3	13.4	13.0	3.5	3.5	7.1	6.6	2.7	*2.9
South	16.0	15.0	14.6	14.7	3.1	3.5	7.6	7.2	3.9	4.0
West	12.2	10.7	14.5	15.1	4.0	4.3	7.1	7.3	*3.4	*3.5
Location of residence[1]										
Within SMSA	12.1	11.4	13.4	13.3	3.4	3.5	6.9	6.6	3.0	3.2
Outside SMSA	15.4	14.3	14.9	15.3	3.5	3.8	7.6	7.6	*3.8	*3.9

[1] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.
[2] Includes all other races not shown separately.
[3] Includes unknown family income.
[4] Family income categories for 1979. Corresponding income categories in 1974, adjusting for inflation, were: less than $5,000; $5,000-$6,999; $7,000-$9,999; $10,000-$14,999; and $15,000 or more.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 28. Restricted-activity and bed-disability days, according to selected characteristics: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Characteristic	Restricted-activity days		Bed-disability days	
	1974	1979	1974	1979
	Number per person per year			
Total[1,2,3]	17.0	18.5	6.6	6.6
Age				
Under 17 years	10.7	11.0	4.8	4.9
17-44 years	13.5	15.0	5.3	5.4
45-64 years	23.6	26.0	8.4	8.3
65 years and over	38.0	41.9	14.3	13.7
Sex[1]				
Male	15.9	17.0	5.9	5.7
Female	18.0	19.9	7.3	7.5
Race[1]				
White	16.6	18.0	6.3	6.3
Black	22.7	24.8	9.9	9.7
Family income[1,4]				
Less than $7,000	25.7	30.6	9.9	10.6
$7,000-$9,999	20.0	22.0	8.0	8.3
$10,000-$14,999	16.6	17.5	6.5	6.4
$15,000-$24,999	15.0	15.2	5.8	5.5
$25,000 or more	12.8	14.2	5.0	5.1
Geographic area[1]				
Northeast	14.8	16.9	6.3	6.6
North Central	16.2	17.0	5.9	5.6
South	18.7	19.3	7.5	7.2
West	18.6	21.5	6.8	7.1
Location of residence[1]				
Within SMSA	17.2	18.6	6.9	6.9
Outside SMSA	16.8	18.4	6.1	6.2

[1] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.
[2] Includes all other races not shown separately.
[3] Includes unknown family income.
[4] Family income categories for 1979. Corresponding income categories in 1974, adjusting for inflation, were: less than $5,000; $5,000-$6,999; $7,000-$9,999; $10,000-$14,999; and $15,000 or more.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 29. Disability days associated with acute conditions and incidence of acute conditions, according to age: United States, 1970-79

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Age	Year ending June 30									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Restricted-activity days	Number per person									
All ages[1]	8.5	8.6	9.3	9.2	9.3	9.7	9.4	9.4	9.8	9.5
Under 17 years	8.6	9.5	9.4	9.3	9.9	9.4	9.7	10.0	10.0	9.8
17-44 years	8.0	8.0	8.8	8.9	8.9	9.4	8.8	9.1	9.5	9.4
45-64 years	8.7	7.2	9.3	8.6	8.2	9.8	9.1	8.6	8.8	8.2
65 years and over	9.8	10.3	10.9	10.8	10.7	12.1	11.6	10.1	12.1	11.6
Bed-disability days[2]										
All ages[1]	3.8	3.8	4.1	4.0	4.0	4.2	4.2	4.2	4.5	4.2
Under 17 years	4.0	4.5	4.3	4.1	4.5	4.0	4.6	4.8	5.0	4.7
17-44 years	3.5	3.6	3.9	4.0	3.8	4.2	4.0	3.9	4.3	4.0
45-64 years	3.8	3.1	3.6	3.6	3.5	4.0	3.8	3.7	3.6	3.5
65 years and over	4.0	4.0	4.7	4.3	4.1	5.3	4.7	4.5	5.1	5.0
Incidence of acute conditions	Number per 100 persons									
All ages[1]	204.1	209.8	220.9	[3]199.6	[3]174.2	[3]199.1	218.4	222.6	224.2	222.4
Under 17 years	290.3	310.6	307.9	280.1	254.8	282.6	305.7	315.0	310.6	311.4
17-44 years	193.2	194.2	215.1	196.0	170.2	194.7	215.3	216.1	222.3	221.8
45-64 years	132.8	125.3	144.0	124.6	98.3	123.4	136.7	142.2	143.0	131.9
65 years and over	103.0	105.6	109.2	98.1	75.7	91.3	105.5	102.4	111.0	115.5

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[1] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.
[2] A subset of restricted-activity days.
[3] The 1974 estimates are artificially low because of modifications in the questionnaire design for the 1973 and 1974 surveys. Since the data are collected on a calendar year basis, the 1973 and 1975 estimates are also partially affected.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 30. Cigarette smoking status of persons 20 years of age and over, according to sex, race, and age: United States, 1965, 1976, and 1980

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Sex, race, and age	Smoking status					
	Current smoker[1]			Former smoker		
	1965	1976	1980[2]	1965	1976	1980[2]
MALE						
Total[3,4]	Percent of persons					
All ages, 20 years and over	52.4	41.9	38.3	20.5	28.9	29.2
20-24 years	59.2	45.9	40.5	9.0	12.2	11.4
25-34 years	60.7	48.5	42.7	14.7	18.3	21.1
35-44 years	58.2	47.6	42.2	20.6	27.3	27.6
45-64 years	51.9	41.3	40.8	24.1	37.1	37.2
65 years and over	28.5	23.0	18.4	28.1	44.4	46.8
White						
All ages, 20 years and over	51.5	41.2	37.6	21.4	30.0	30.4
20-24 years	58.1	45.3	39.6	9.6	13.3	11.5
25-34 years	60.1	47.7	41.7	15.5	18.9	22.1
35-44 years	57.3	46.8	42.1	21.5	28.9	28.7
45-64 years	51.3	40.6	40.2	25.1	38.1	38.5
65 years and over	27.7	22.8	17.3	28.7	45.6	49.1
Black						
All ages, 20 years and over	60.8	50.5	45.1	12.1	19.3	20.3
20-24 years	67.4	52.8	47.6	3.8	4.1	10.6
25-34 years	68.4	59.4	52.6	6.7	11.8	12.7
35-44 years	67.3	58.8	42.0	12.3	13.8	21.6
45-64 years	57.9	49.7	46.5	15.3	28.6	28.4
65 years and over	36.4	26.4	28.9	21.5	33.0	28.4
FEMALE						
Total[3,4]						
All ages, 20 years and over	34.1	32.0	29.2	8.2	13.8	15.5
20-24 years	41.9	34.2	32.5	7.3	10.4	10.7
25-34 years	43.7	37.5	31.4	9.9	12.9	14.3
35-44 years	43.7	38.2	34.6	9.6	15.8	19.1
45-64 years	32.0	34.8	30.4	8.6	15.9	17.0
65 years and over	9.6	12.8	16.7	4.5	11.7	14.8
White						
All ages, 20 years and over	34.2	31.8	29.5	8.5	14.4	16.0
20-24 years	41.9	34.4	33.0	8.0	11.4	11.9
25-34 years	43.4	37.1	31.6	10.3	13.7	14.5
35-44 years	43.9	38.1	35.6	9.9	17.0	20.1
45-64 years	32.7	34.7	30.2	8.8	16.4	17.3
65 years and over	9.8	13.2	17.5	4.5	11.5	14.9

See footnotes at end of table.

Table 30. Cigarette smoking status of persons 20 years of age and over, according to sex, race, and age: United States, 1965, 1976, and 1980—Continued

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Sex, race, and age	Smoking status					
	Current smoker[1]			Former smoker		
	1965	1976	1980[2]	1965	1976	1980[2]
	Percent of persons					
Black						
All ages, 20 years and over	34.4	35.1	29.6	6.0	9.9	11.5
20-24 years	44.2	34.9	31.5	2.5	5.0	1.8
25-34 years	47.8	42.5	32.9	6.7	8.9	11.2
35-44 years	42.8	41.3	34.4	7.0	9.6	13.7
45-64 years	25.7	38.1	33.7	6.6	11.9	14.3
65 years and over	7.1	9.2	8.7	4.5	13.3	15.2

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[1] A current smoker is a person who has smoked at least 100 cigarettes and who now smokes; includes occasional smokers.
[2] Based on data for the last 6 months of 1980.
[3] Base of percent excludes persons with unknown smoking status.
[4] Includes all other races not shown separately.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 31. Cigarettes smoked per day by persons 20 years of age and over, according to sex, race, and age: United States, 1965, 1976, and 1980

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Sex, race, and age	Cigarettes smoked per day								
	Less than 15			15-24			25 or more		
	1965	1976	1980[1]	1965	1976	1980[1]	1965	1976	1980[1]
MALE									
Total[2,3]	Percent of current smokers[4]								
All ages, 20 years and over	28.3	24.2	23.1	46.3	44.8	42.7	25.4	31.0	34.1
20-24 years	34.9	31.6	32.0	49.7	49.9	47.8	15.4	18.5	20.2
25-34 years	25.7	25.5	23.6	50.0	45.8	46.5	24.3	28.7	29.9
35-44 years	23.7	19.6	15.8	44.8	41.2	42.3	31.5	39.2	41.9
45-64 years	26.7	18.5	21.6	45.3	44.1	36.4	28.0	37.4	42.0
65 years and over	47.1	39.1	29.2	39.0	42.7	46.1	13.8	18.2	24.7
White									
All ages, 20 years and over	25.9	21.4	19.1	46.8	44.9	43.6	27.4	33.7	37.4
20-24 years	32.3	27.5	27.1	50.8	52.8	50.4	16.9	19.7	22.4
25-34 years	22.8	22.1	19.5	51.1	46.5	47.4	26.1	31.4	33.1
35-44 years	21.3	17.2	12.8	44.8	40.4	42.1	33.9	42.5	45.1
45-64 years	24.6	16.2	17.3	45.4	43.3	37.4	30.0	40.4	45.3
65 years and over	44.6	37.5	26.1	40.3	42.2	46.2	15.1	20.4	27.7
Black									
All ages, 20 years and over	48.1	43.8	48.7	42.6	44.8	40.3	9.3	11.5	10.9
20-24 years	52.7	56.9	56.6	41.9	34.2	36.7	*5.3	*8.9	6.8
25-34 years	47.8	46.0	44.4	41.7	43.5	46.2	10.5	10.5	9.6
35-44 years	42.5	38.5	45.6	45.5	44.8	41.1	12.0	16.7	13.2
45-64 years	46.9	35.9	51.1	43.7	50.8	35.0	9.4	13.3	14.1
65 years and over	64.9	53.0	41.7	31.9	47.0	47.2	*3.2	*-	11.1
FEMALE									
Total[2,3]									
All ages, 20 years and over	43.6	36.5	34.2	42.2	43.8	42.0	14.2	19.6	23.7
20-24 years	48.4	43.1	42.8	41.9	42.4	41.1	9.7	14.5	16.1
25-34 years	41.4	34.3	33.5	43.1	45.2	41.9	15.5	20.5	24.6
35-44 years	39.1	33.8	27.8	43.7	44.4	39.3	17.1	21.8	33.0
45-64 years	44.4	34.3	29.8	42.0	44.2	45.9	13.6	21.5	24.2
65 years and over	62.6	49.3	48.9	31.0	38.9	37.7	6.4	11.8	13.4
White									
All ages, 20 years and over	41.0	33.2	30.6	43.9	45.2	43.8	15.1	21.6	25.6
20-24 years	45.3	39.3	37.4	44.4	44.3	44.1	10.4	16.4	18.5
25-34 years	37.9	30.6	28.6	45.4	46.8	44.9	16.7	22.6	26.5
35-44 years	36.2	29.5	24.6	45.3	45.4	39.9	18.4	25.1	35.5
45-64 years	42.4	32.0	26.4	43.2	45.1	47.8	14.5	23.0	25.9
65 years and over	61.5	45.7	48.1	31.8	41.7	37.7	6.8	12.6	14.2

See footnotes at end of table.

Table 31. Cigarettes smoked per day by persons 20 years of age and over, according to sex, race, and age: United States, 1965, 1976, and 1980--Continued

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Sex, race, and age	Cigarettes smoked per day								
	Less than 15			15-24			25 or more		
	1965	1976	1980[1]	1965	1976	1980[1]	1965	1976	1980[1]
	Percent of current smokers[4]								
Black									
All ages, 20 years and over	67.7	60.0	61.1	26.4	33.8	28.9	5.9	6.1	10.0
20-24 years	73.4	65.7	78.0	22.1	31.3	22.0	*4.5	*3.0	-
25-34 years	66.2	58.8	61.9	25.1	33.6	22.0	8.7	*7.7	16.2
35-44 years	63.4	60.4	55.6	30.4	38.1	35.6	*6.2	*1.4	8.8
45-64 years	69.4	53.2	53.8	26.9	36.7	34.2	*3.6	10.1	12.0
65 years and over	83.2	100.0	66.3	*16.8	*-	34.7	*-	*-	-

[1] Based on data for the last 6 months of 1980.
[2] Base of percent excludes unknown amount smoked.
[3] Includes all other races not shown separately.
[4] A current smoker is a person who has smoked at least 100 cigarettes and who now smokes; includes occasional smokers.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 32. Teenage cigarette smoking, according to smoking status, sex, and age: United States, 1968, 1974, and 1979

(Data are based on telephone interviews of samples of the noninstitutionalized population)

Sex and age	Current smoker[1]			Former smoker		
	1968	1974	1979	1968	1974	1979
	Percent of teenagers					
Both sexes, 12-18 years	13.5	16.1	12.1	4.5	8.5	6.9
Male						
12-18 years	17.0	16.3	11.1	5.9	9.2	8.1
12-14 years	4.3	4.2	3.2	2.7	5.1	4.0
15-16 years	19.3	18.1	14.6	5.5	12.4	10.1
17-18 years	34.0	32.6	19.6	11.3	12.1	12.3
Female						
12-18 years	10.0	15.9	13.1	3.1	7.9	5.8
12-14 years	1.4	5.1	4.3	0.7	4.7	3.4
15-16 years	11.8	21.6	12.3	3.8	9.1	5.9
17-18 years	21.0	26.4	27.0	6.0	11.4	9.1

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[1] A current smoker is a person who has smoked at least 100 cigarettes and who now smokes; includes occasional smokers.

SOURCE: Green, D. E.: Teenage Smoking, Immediate and Long-Term Patterns. Chilton Research Services. Contract No. 400-79-0010. Prepared for the National Institute of Education. Washington. U.S. Government Printing Office, Nov. 1979.

Table 33. Air pollution, according to source and type of pollutant: United States, selected years 1970-79

(Data are calculated emissions estimates)

Type of pollutant and year	Source					
	All sources	Transportation	Stationary fuel combustion	Industrial processes	Solid waste	Other
	Emissions in 10^6 metric tons per year					
Particulate matter						
1970	21.0	1.3	7.3	10.2	1.1	1.1
1975	11.6	1.3	3.5	5.5	0.6	0.7
1976	10.6	1.4	2.9	4.9	0.4	1.0
1977	9.9	1.4	2.9	4.4	0.4	0.8
1978	9.7	1.4	2.7	4.4	0.4	0.8
1979	9.5	1.4	2.5	4.3	0.4	0.9
Sulfur oxides						
1970	28.3	0.7	21.1	6.4	(1)	0.1
1975	25.2	0.6	20.0	4.6	(1)	(1)
1976	25.9	0.8	20.7	4.4	(1)	(1)
1977	25.4	0.8	20.3	4.3	(1)	(1)
1978	24.3	0.8	19.4	4.1	(1)	(1)
1979	24.5	0.8	19.6	4.1	(1)	(1)
Nitrogen oxides						
1970	19.1	7.2	10.4	0.8	0.4	0.3
1975	20.2	8.6	10.7	0.7	0.1	0.1
1976	21.8	9.0	11.7	0.8	0.1	0.2
1977	22.4	9.1	12.2	0.8	0.1	0.2
1978	22.7	9.4	12.2	0.8	0.1	0.2
1979	22.6	9.2	12.3	0.8	0.1	0.2
Hydrocarbons						
1970	27.7	12.1	0.3	10.3	1.8	3.2
1975	23.4	10.2	0.2	9.8	0.9	2.3
1976	24.4	10.1	0.2	10.7	0.8	2.6
1977	24.4	9.8	0.2	11.2	0.8	2.4
1978	25.4	9.5	0.2	12.3	0.8	2.6
1979	24.6	8.8	0.2	12.4	0.8	2.4
Carbon monoxide						
1970	112.9	88.7	1.8	9.0	6.4	7.0
1975	98.0	81.6	1.6	6.9	3.1	4.8
1976	99.4	81.4	1.6	6.6	2.7	7.1
1977	96.4	79.7	1.7	6.6	2.6	5.8
1978	94.9	78.6	1.8	6.3	2.5	5.7
1979	91.4	74.5	1.9	6.3	2.5	6.2

[1] Emissions of less than 50,000 metric tons per year.

NOTE: Because of modifications in methodology and use of more refined emission factors, data from this table should not be compared with data in Health, United States, 1980.

SOURCE: Monitoring and Data Analysis Division: National Air Pollutant Emission Estimates, 1970-1979. EPA-450/4-81-010. U.S. Environmental Protection Agency. Research Triangle Park, N.C. Mar. 1981.

Table 34. Physician visits, according to source or place of care and selected patient characteristics: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Characteristic	Source or place of care							
	All sources or places[1]		Doctor's office or clinic or group practice		Hospital outpatient department[2]		Telephone	
	1974	1979	1974	1979	1974	1979	1974	1979
	Visits per 1,000 population							
Total[3,4,5]	4,921.0	4,699.8	3,376.6	3,175.4	585.0	618.8	612.8	603.5
Age								
Under 17 years	4,140.7	4,140.0	2,570.1	2,601.5	509.4	535.6	766.3	756.4
17-44 years	4,809.8	4,470.3	3,248.5	3,069.8	648.8	588.1	532.5	496.7
45-64 years	5,517.5	5,230.3	4,088.0	3,617.6	591.4	762.7	508.9	508.9
65 years and over	6,730.8	6,349.1	5,091.5	4,589.9	585.9	709.4	618.9	693.3
Sex[3]								
Male	4,314.6	4,114.6	2,905.8	2,723.4	596.2	654.5	481.2	454.8
Female	5,476.2	5,236.0	3,812.6	3,581.9	574.3	591.7	731.0	740.8
Race[3]								
White	4,993.2	4,764.3	3,458.5	3,278.9	528.8	556.4	666.6	650.1
Black	4,688.8	4,538.0	2,932.5	2,641.3	1,064.6	1,110.5	*284.8	348.5
Family income[3,6]								
Less than $7,000	5,305.3	5,358.2	3,235.9	3,141.6	994.4	1,128.4	484.4	543.9
$7,000-$9,999	4,871.7	5,139.7	3,248.3	3,445.3	818.4	790.9	467.2	570.5
$10,000-$14,999	5,065.1	4,582.1	3,536.2	3,035.9	587.5	618.1	556.4	631.5
$15,000-$24,999	4,764.4	4,624.6	3,325.7	3,253.5	514.2	519.3	662.5	637.4
$25,000 or more	5,162.6	4,658.3	3,649.2	3,349.9	435.8	425.4	737.0	624.1
Geographic region[3]								
Northeast	5,010.8	4,982.1	3,219.9	3,141.2	691.6	790.2	673.1	713.1
North Central	4,770.8	4,502.2	3,343.8	3,147.2	474.4	553.0	681.7	609.4
South	4,703.4	4,494.4	3,263.6	3,082.0	586.9	555.4	511.7	510.8
West	5,432.5	5,036.8	3,853.2	3,433.4	606.2	627.1	609.4	639.8
Location of residence[3]								
Within SMSA	5,162.2	4,867.0	3,462.1	3,231.2	642.9	674.3	691.8	631.0
Outside SMSA	4,390.6	4,336.2	3,189.2	3,052.9	457.7	500.4	439.0	545.2

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[1] Includes all other sources or places of care not shown separately.
[2] Includes hospital outpatient clinic or emergency room.
[3] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.
[4] Includes all other races not shown separately.
[5] Includes unknown family income.
[6] Family income categories for 1979. Corresponding income categories in 1974, adjusting for inflation, were: less than $5,000; $5,000-$6,999; $7,000-$9,999; $10,000-$14,999; and $15,000 or more.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 35. Interval since last physician visit, according to selected patient characteristics: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Characteristic	Interval since last physician visit							
	Less than 1 year		1 year-less than 2 years		2-4 years		5 years or more	
	1974	1979	1974	1979	1974	1979	1974	1979
	Percent of population							
Total[1, 2, 3]	75.3	75.1	10.7	11.1	9.5	9.1	3.8	3.4
Age								
Under 17 years	74.2	75.6	13.3	13.7	8.8	7.4	2.5	1.7
17-44 years	76.5	74.2	10.3	11.2	9.5	10.3	3.0	3.1
45-64 years	73.9	73.6	8.9	9.3	10.9	10.4	5.7	5.6
65 years and over	77.2	79.8	6.7	5.7	8.9	7.8	6.7	5.9
Sex[1]								
Male	71.3	70.8	11.7	12.2	11.6	11.2	4.5	4.4
Female	78.9	78.9	9.7	10.1	7.6	7.2	3.1	2.6
Race[1]								
White	75.9	75.3	10.4	11.0	9.4	9.1	3.6	3.3
Black	72.0	74.7	11.7	11.3	10.1	8.5	5.0	3.6
Family income[1, 4]								
Less than $7,000	74.3	75.7	10.2	10.2	10.0	8.8	4.5	3.9
$7,000-$9,999	73.7	73.5	10.5	11.6	10.4	9.7	4.6	3.9
$10,000-$14,999	74.4	74.4	10.6	10.8	10.3	9.9	4.0	3.9
$15,000-$24,999	75.4	76.2	10.9	10.8	9.5	9.1	3.7	3.1
$25,000 or more	77.9	76.9	10.4	11.4	8.5	8.2	2.7	2.5
Geographic region[1]								
Northeast	76.7	76.3	10.4	10.6	8.8	8.5	3.5	3.4
North Central	75.2	75.5	10.2	10.7	10.2	9.1	3.6	3.2
South	74.4	73.9	11.3	11.8	9.3	9.3	4.1	3.6
West	75.3	75.1	10.4	11.0	9.7	9.4	3.6	3.4
Location of residence[1]								
Within SMSA	76.4	75.7	10.2	11.0	9.1	8.7	3.5	3.3
Outside SMSA	72.8	73.7	11.6	11.3	10.4	10.1	4.2	3.8

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[1] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.
[2] Includes all other races not shown separately.
[3] Includes unknown family income.
[4] Family income categories for 1979. Corresponding income categories in 1974, adjusting for inflation, were: less than $5,000; $5,000-$6,999; $7,000-$9,999; $10,000-$14,999; and $15,000 or more.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 36. Office visits to physicians, according to physician specialty and selected patient characteristics: United States, 1974 and 1979

(Data are based on reporting by a sample of office-based physicians)

Characteristic	Specialty											
	All specialties[1]		General and family practice		Internal medicine		Obstetrics and gynecology		Pediatrics		General surgery	
	1974	1979	1974	1979	1974	1979	1974	1979	1974	1979	1974	1979
	Visits per 1,000 population											
Total[2]	2,762.9	2,558.4	1,157.6	864.9	300.6	296.1	220.7	215.2	239.5	328.9	179.9	151.2
Age												
Under 15 years	1,981.0	2,035.1	708.2	560.5	24.5	43.2	23.9	6.4	793.3	1,058.3	69.5	53.4
15-44 years	2,653.9	2,385.8	1,118.8	832.6	223.1	197.2	436.4	443.0	23.5	50.4	180.9	148.4
45-64 years	3,374.2	2,974.0	1,511.0	1,071.0	540.8	546.6	146.7	137.0	1.1	8.9	281.4	245.0
65 years and over	4,259.6	3,968.7	1,912.0	1,474.1	941.9	935.8	59.3	48.5	2.3	3.7	288.1	255.1
Sex[2]												
Male	2,332.3	2,149.9	983.6	730.4	269.0	266.4	13.5	1.5	247.2	332.1	160.4	142.5
Female	3,155.7	2,933.1	1,313.8	985.3	328.2	322.1	413.9	416.3	231.6	325.4	197.1	159.4
Race[2,3]												
White	2,870.0	2,670.2	1,187.9	880.8	307.8	310.5	227.4	221.4	258.1	355.1	191.4	155.9
All other	2,154.4	1,868.7	1,007.8	784.1	247.8	186.9	184.1	174.2	148.0	207.5	103.8	115.2

[1] Includes other specialties not shown separately.
[2] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.
[3] A change in the coding procedure for racial categories in 1979 may be partially responsible for the drop in office visits for the all other racial group.

NOTE: Rates are based on the civilian noninstitutionalized population, excluding Alaska and Hawaii.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Ambulatory Medical Care Survey.

Table 37. Office visits to physicians, according to selected characteristics: United States, 1974 and 1979

(Data are based on reporting by a sample of office-based physicians)

Selected characteristic	Office visit					
	Patient's first visit		Visit lasted 10 minutes or less[1]		Return visit scheduled	
	1974	1979	1974	1979	1974	1979
	Percent of visits					
Total[2]	15.6	16.2	51.4	48.0	57.2	59.7
Age						
Under 15 years	16.0	15.8	57.9	58.2	47.6	49.8
15-44 years	19.0	19.5	51.2	47.7	57.5	60.5
45-64 years	12.3	13.1	46.4	39.0	64.1	65.6
65 years and over	7.5	10.2	43.2	37.6	69.7	73.0
Sex[2]						
Male	17.4	17.9	51.8	48.3	54.6	56.5
Female	14.8	15.4	51.0	47.8	58.5	61.4
Race[2]						
White	15.2	15.9	51.4	47.9	57.1	59.5
All other	19.8	18.6	51.5	48.7	58.0	61.3
Location of physician's office[2]						
Within SMSA	15.9	16.9	47.1	45.6	59.5	61.8
Outside SMSA	14.9	14.2	64.2	54.7	49.9	53.9

[1] Time spent in face-to-face contact between physician and patient.

[2] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.

NOTE: Rates are based on the civilian noninstitutionalized population, excluding Alaska and Hawaii.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Ambulatory Medical Care Survey.

Table 38. Dental visits and interval since last visit, according to selected patient characteristics: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Characteristic	Visits per 1,000 population		Interval since last dental visit								Never visited dentist	
			Less than 1 year		1 year-less than 2 years		2-4 years		5 years or more			
	1974	1979	1974	1979	1974	1979	1974	1979	1974	1979	1974	1979
			Percent of population									
Total [1,2,3]	1,650.0	1,696.3	49.3	50.2	10.9	12.8	13.9	12.2	13.4	12.8	11.0	10.7
Age												
Under 17 years	1,604.3	1,611.9	49.9	50.9	9.6	10.5	7.1	6.2	1.3	1.7	30.6	29.6
17-44 years	1,732.9	1,724.3	55.7	54.7	13.5	16.6	17.6	15.7	9.6	9.4	2.0	2.0
45-64 years	1,789.1	1,910.0	46.7	49.0	10.0	11.9	17.6	14.8	23.7	22.0	0.7	0.8
65 years and over	1,187.0	1,414.7	28.5	32.8	6.9	7.6	15.4	13.7	47.6	43.7	0.8	0.7
Sex [1]												
Male	1,497.0	1,556.1	47.2	48.2	10.8	12.9	15.0	12.8	14.0	13.6	11.3	11.0
Female	1,794.2	1,829.1	51.2	52.0	10.8	12.7	12.9	11.6	12.9	12.1	10.7	10.4
Race [1]												
White	1,754.9	1,797.7	51.6	52.5	10.6	12.4	13.2	11.5	13.1	12.3	10.1	10.0
Black	929.8	1,036.6	32.9	34.1	12.3	15.2	19.0	17.5	17.0	16.6	16.7	14.7
Family income [1,4]												
Less than $7,000	1,191.3	1,260.9	36.4	37.9	10.5	12.7	16.4	15.1	18.4	18.5	17.0	14.8
$7,000-$9,999	1,164.1	1,235.3	38.2	38.5	12.0	13.4	17.1	15.6	16.6	16.9	*14.8	*14.4
$10,000-$14,999	1,380.4	1,323.0	42.0	43.9	11.6	13.8	16.3	14.2	14.8	14.3	*13.8	*12.9
$15,000-$24,999	1,608.5	1,850.9	50.2	53.6	11.1	13.0	14.4	11.8	12.4	10.7	*10.7	*9.8
$25,000 or more	2,260.1	2,356.6	62.9	65.4	10.2	11.8	10.8	8.4	8.4	6.6	*6.3	*6.2
Geographic region [1]												
Northeast	1,986.8	2,067.9	54.0	56.0	11.0	11.7	12.4	10.8	12.2	11.9	*8.9	*8.4
North Central	1,566.2	1,603.3	51.4	51.8	9.8	12.5	14.0	11.7	14.1	13.4	*9.5	*9.5
South	1,318.5	1,443.3	43.3	44.2	11.6	13.2	14.7	13.6	14.8	14.5	13.9	13.0
West	1,922.5	1,846.9	50.7	51.9	10.9	13.7	14.4	12.2	11.8	9.8	*10.9	*11.0
Location of residence [1]												
Within SMSA	1,800.6	1,868.6	51.5	51.9	10.7	12.9	13.5	11.9	12.3	11.3	10.4	10.4
Outside SMSA	1,304.9	1,326.9	44.5	46.4	11.1	12.5	14.9	12.7	15.8	15.8	12.4	11.4

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[1] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.

[2] Includes all other races not shown separately.

[3] Includes unknown family income.

[4] Family income categories for 1979. Corresponding income categories in 1973, adjusting for inflation, were: less than $5,000; $5,000-$6,999, $7,000-$9,999; $10,000-$14,999; and $15,000 or more.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 39. Discharges from and days of care in short-stay hospitals, according to type of hospital and ownership: United States, 1974 and 1979

(Data are based on reporting by facilities)

Year and type of ownership	All short-stay hospitals	Community hospitals			All other hospitals			
		Total	General	Specialty	Total	General	Psychiatric	Other
	Number of discharges							
1974								
All ownerships	35,103,287	33,209,621	32,867,327	342,294	1,893,666	1,718,090	133,760	41,816
Government	8,776,702	7,006,958	6,961,198	45,760	1,769,744	1,703,439	53,576	12,729
Federal	1,654,718	-	-	-	1,654,718	1,650,149	-	4,569
State-local	7,121,984	7,006,958	6,961,198	45,760	115,026	53,290	53,576	8,160
Proprietary	2,718,857	2,658,071	2,600,499	57,572	60,786	-	44,622	16,164
Nonprofit	23,607,728	23,544,592	23,305,630	238,962	63,136	14,651	35,562	12,923
1979								
All ownerships	37,471,315	35,329,166	34,937,887	391,279	2,142,149	1,920,673	166,602	54,874
Government	9,277,755	7,286,756	7,243,167	43,589	1,990,999	1,909,251	63,842	17,906
Federal	1,876,332	-	-	-	1,876,332	1,866,158	-	10,174
State-local	7,401,423	7,286,756	7,243,167	43,589	114,667	43,093	63,842	7,732
Proprietary	3,127,538	3,043,677	2,974,042	69,635	83,861	-	57,930	25,931
Nonprofit	25,066,022	24,998,733	24,720,678	278,055	67,289	11,422	44,830	11,037
	Number of days of care							
1974								
All ownerships	287,069,332	258,399,572	255,751,505	2,648,067	28,669,760	25,441,452	2,685,243	543,065
Government	80,849,812	54,140,739	53,595,188	545,551	26,709,073	25,390,400	1,082,133	236,540
Federal	25,155,433	-	-	-	25,155,433	25,041,313	-	114,120
State-local	55,694,379	54,140,739	53,595,188	545,551	1,553,640	349,087	1,082,133	122,420
Proprietary	19,008,427	17,948,581	17,646,173	302,408	1,059,846	-	880,128	179,718
Nonprofit	187,211,093	186,310,252	184,510,144	1,800,108	900,841	51,052	722,982	126,807
1979								
All ownerships	295,255,103	266,530,192	263,324,322	3,205,870	28,724,911	24,122,033	3,663,623	939,255
Government	79,665,394	53,595,392	52,865,687	729,705	26,070,002	24,077,472	1,551,218	441,312
Federal	23,951,406	-	-	-	23,951,406	23,704,124	-	247,282
State-local	55,713,988	53,595,392	52,865,687	729,705	2,118,596	373,348	1,551,218	194,030
Proprietary	21,483,371	19,970,265	19,640,453	329,812	1,513,106	-	1,216,804	296,302
Nonprofit	194,106,338	192,964,535	190,818,182	2,146,353	1,141,803	44,561	895,601	201,641

NOTE: Community hospitals include all non-Federal short-stay hospitals classified by the American Hospital Association according to one of the following services: general medical and surgical; obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; other specialty; children's general; children's eye, ear, nose, and throat; children's rehabilitation; children's orthopedic; and children's other specialty.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

Table 40. Discharges from and days of care in non-Federal short-stay hospitals, according to sex, age, selected first-listed diagnosis, and ICDA code: United States, 1974 and 1979

(Data are based on a sample of hospital records)

Sex, age, and first-listed diagnosis	ICDA codes[1]		Discharges		Days of care	
	Eighth Revision	Ninth Revision	1974	1979	1974	1979
			Number per 1,000 population			
Both sexes[2,3]						
Total[4]	...	...	156.2	162.8	1,205.2	1,158.2
Diseases of the heart	390-398, 402, 404, 410-414, 420-429	390-398, 402.1, 402.9, 404.1, 404.9, 410-414, 420-429	11.7	13.0	129.3	122.8
Malignant neoplasms	140-209	140-208, 230-234, 289.8	7.0	7.9	92.8	94.1
Fracture	800-829	800-829, 905.0-905.5	5.5	5.3	63.7	54.0
Neuroses and nonpsychotic disorders	300-309	300-316	4.9	5.2	45.8	49.4
Pneumonia	480-486	480-486	3.3	3.6	29.0	27.7
Male						
Under 15 years[4]	...	...	78.8	80.3	366.9	352.4
Pneumonia	480-486	480-486	4.8	5.9	27.6	30.6
Fracture	800-829	800-829, 905.0-905.5	4.6	4.0	29.9	22.0
Congenital anomalies	740-759	740-759	3.4	3.8	19.7	22.0
Inguinal hernia	550, 552	550	3.1	2.7	7.9	6.0
Bronchitis, emphysema, asthma	490-493	490-493	2.9	3.7	12.0	14.9
Intercranial injury	850-854	850-854	2.6	2.3	9.7	5.8
15-44 years[4]	...	...	92.8	97.1	637.6	616.5
Fracture	800-829	800-829, 905.0-905.5	6.4	6.6	58.2	51.4
Neuroses and nonpsychotic disorders	300-309	300-316	6.2	7.4	52.0	69.2
Lacerations	870-907	870-904, 904.02, 906.0	3.8	3.8	18.4	17.8
Sprains and strains	840-848	840-848, 905.7	2.9	3.7	17.7	21.0
Diseases of the heart	390-398, 402, 404, 410-414, 420-429	390-398, 402.1, 402.9, 404.1, 404.9, 410-414, 420-429	2.9	3.1	24.9	22.1
Intercranial injury	850-854	850-854	2.3	2.3	12.6	11.1

See footnotes at end of table.

Table 40. Discharges from and days of care in non-Federal short-stay hospitals, according to sex, age, selected first-listed diagnosis, and ICDA code: United States, 1974 and 1979--Continued

(Data are based on a sample of hospital records)

Sex, age, and first-listed diagnosis	ICDA codes[1]		Discharges		Days of care	
	Eighth Revision	Ninth Revision	1974	1979	1974	1979
			Number per 1,000 population			
Male--Con.						
45-64 years[4]	...	...	182.4	193.2	1,687.0	1,562.7
Diseases of the heart	390-398, 402, 404, 410-414, 420-429	390-398, 402.1, 402.9, 404.1, 404.9, 410-414, 420-429	29.4	33.2	306.8	279.6
Malignant neoplasms	140-209	140-208, 230-234, 289.8	12.1	14.0	166.8	161.3
Neuroses and nonpsychotic disorders	300-309	300-309	8.8	9.6	79.7	82.8
Inguinal hernia	550, 552	550	7.8	6.3	52.5	34.3
Fracture	800-829	800-829, 905.0-905.5	5.3	5.2	58.0	51.0
Ulcer	531-534	531-534	5.0	3.6	44.0	27.3
65 years and over[4]	...	...	371.5	410.5	4,273.8	4,287.1
Diseases of the heart	390-398, 402, 404, 410-414, 420-429	390-398, 402.1, 402.9, 404.1, 404.9, 410-414, 420-429	74.9	77.9	848.5	792.1
Malignant neoplasms	140-209	140-208, 230-234, 289.8	40.1	48.6	567.6	621.2
Cerebrovascular disease	430-438	430-438	22.0	24.4	305.3	307.6
Hyperplasia of prostate	600	600	19.1	16.5	220.1	172.4
Pneumonia	480-486	480-486	12.5	13.5	153.3	146.0
Female						
Under 15 years[4]	...	...	64.4	64.7	287.9	275.5
Pneumonia	480-486	480-486	3.9	4.3	24.0	22.0
Fracture	800-829	800-829, 905.0-905.5	2.7	2.1	16.4	11.2
Congenital anomalies	740-759	740-759	2.4	2.5	16.4	13.1
Bronchitis, emphysema, asthma	490-493	490-493	1.8	2.3	8.4	8.4
Eye diseases and conditions	360-379	360-379	1.3	1.6	3.6	3.4

See footnotes at end of table.

Table 40. Discharges from and days of care in non-Federal short-stay hospitals, according to sex, age, selected first-listed diagnosis, and ICDA code: United States, 1974 and 1979--Continued

(Data are based on a sample of hospital records)

Sex, age, and first-listed diagnosis	ICDA codes[1]		Discharges		Days of care	
	Eighth Revision	Ninth Revision	1974	1979	1974	1979
			Number per 1,000 population			
Female--Con.						
15-44 years[4]	...	...	213.7	213.0	1,129.0	1,009.0
Delivery	650-662	V27	67.5	71.1	269.2	266.3
Disorders of menstruation	626	625.3, 626, 627.1	7.9	7.3	32.9	24.0
Benign neoplasms	210-228	210-229	7.2	4.2	38.2	22.5
Neuroses and nonpsychotic disorders	300-309	300-316	6.6	6.2	63.5	56.1
Malignant neoplasms	140-209	140-208, 230-234, 289.8	3.0	2.7	28.3	21.7
Cholelithiasis (gallstones)	574	574	2.8	2.6	27.0	20.6
45-64 years[4]	...	...	193.0	199.0	1,712.7	1,642.3
Diseases of the heart	390-398, 402, 404, 410-414, 420-429	390-398, 402.1, 402.9, 404.1, 404.9, 410-414, 420-429	14.9	17.5	150.9	151.8
Malignant neoplasms	140-209	140-208, 230-234, 289.8	14.7	16.3	189.0	188.2
Benign neoplasms	210-228	210-229	8.6	5.7	59.1	36.6
Disorders of menstruation	626	625.3, 626, 627.1	7.6	6.9	28.9	22.2
Neuroses and nonpsychotic disorders	300-309	300-316	5.8	6.3	57.9	57.8
65 years and over[4]	...	...	328.1	373.6	3,984.0	4,109.1
Diseases of the heart	390-398, 402, 404, 410-414, 420-429	390-398, 402.1, 402.9, 404.1, 404.9, 410-414, 420-429	57.1	65.1	709.7	695.1
Malignant neoplasms	140-209	140-208, 230-234, 289.8	26.9	31.1	406.2	429.4
Fracture	800-829	800-829, 905.0-905.5	22.7	21.3	409.7	348.8
Cerebrovascular disease	430-438	430-438	21.1	23.2	291.7	299.2
Eye diseases and conditions	360-379	360-379	14.1	17.1	85.4	70.7
Rheumatoid arthritis and osteoarthritis	712, 713	714, 715, 720.0, 721	7.7	8.8	117.0	112.1

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[1] Diagnostic groupings and code number inclusions are based on the Eighth Revision International Classification of Diseases, Adapted for Use in the United States and Ninth Revision International Classification of Diseases, Clinical Modification.

[2] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.

[3] Includes data for which sex was not stated for 1974 only.

[4] Includes all diagnoses.

NOTE: Rates are based on the civilian noninstitutionalized population.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Hospital Discharge Survey.

Table 41. Discharges from and days of care in non-Federal short-stay hospitals for all patients and for patients with surgery, according to bed size of hospital and age of patient: United States, 1974 and 1979

(Data are based on a sample of hospital records)

Bed size of hospital and age of patient	Discharges				Days of care			
	All patients		Patients with surgery		All patients		Patients with surgery	
	1974	1979	1974	1979	1974	1979	1974	1979
All sizes	Number per 1,000 population							
All ages[1,2]	156.2	162.8	65.5	66.3	1,205.2	1,158.2	514.0	490.9
Under 15 years	71.8	72.7	33.7	27.8	328.4	314.7	137.1	115.3
15-44 years	155.2	156.5	71.0	72.8	891.6	817.8	429.0	386.9
45-64 years	188.1	196.2	80.3	80.0	1,701.8	1,604.3	760.8	705.8
65 years and over	346.2	388.8	105.8	125.4	4,107.0	4,182.5	1,477.3	1,600.1
6-99 beds								
All ages[1,2]	31.6	31.0	9.3	8.3	200.8	181.9	59.6	46.7
Under 15 years	14.4	13.5	5.6	3.8	51.8	43.5	18.3	10.6
15-44 years	28.5	27.7	10.2	9.5	128.7	123.5	52.8	40.9
45-64 years	36.9	36.7	10.6	8.9	259.4	232.0	80.6	57.0
65 years and over	85.2	85.9	14.2	15.0	830.2	739.5	167.4	157.9
100-199 beds								
All ages[1,2]	27.7	28.1	10.9	11.0	194.8	181.8	73.8	71.0
Under 15 years	13.4	12.0	5.6	4.2	56.4	46.8	19.5	14.0
15-44 years	28.1	22.4	12.7	12.6	139.3	126.1	63.9	58.5
45-64 years	30.9	32.6	12.1	12.7	258.7	239.1	98.9	96.6
65 years and over	62.5	69.5	17.1	20.7	709.7	702.1	225.2	240.6
200-299 beds								
All ages[1,2]	25.1	28.8	11.1	12.4	195.8	205.3	87.3	90.9
Under 15 years	11.9	13.4	6.2	5.5	52.9	55.5	24.3	20.1
15-44 years	25.2	28.1	12.1	13.8	146.2	142.7	74.2	71.7
45-64 years	29.6	32.7	13.2	14.0	272.3	271.9	123.4	122.2
65 years and over	54.9	69.4	17.6	24.3	672.3	779.5	254.5	318.1

See footnotes at end of table.

Table 41. Discharges from and days of care in non-Federal short-stay hospitals for all patients and for patients with surgery, according to bed size of hospital and age of patient: United States, 1974 and 1979—Continued

(Data are based on a sample of hospital records)

Bed size of hospital and age of patient	Discharges				Days of care			
	All patients		Patients with surgery		All patients		Patients with surgery	
	1974	1979	1974	1979	1974	1979	1974	1979
300-499 beds	Number per 1,000 population							
All ages[1,2]	41.2	38.2	19.5	17.0	344.1	292.0	157.8	133.0
Under 15 years	18.7	17.7	9.8	7.2	86.9	76.5	37.6	28.3
15-44 years	40.5	36.2	19.8	17.8	250.8	198.8	121.4	98.6
45-64 years	51.9	47.1	25.4	21.2	506.0	417.6	244.4	194.9
65 years and over	88.7	89.8	34.2	34.1	1,165.9	1,066.5	487.6	461.4
500 beds or more								
All ages[1,2]	30.6	36.7	14.7	17.7	269.6	297.0	135.5	149.3
Under 15 years	13.4	16.1	6.6	7.1	80.4	92.3	37.3	42.3
15-44 years	32.9	37.2	16.3	19.1	226.7	226.8	116.7	117.3
45-64 years	38.7	47.1	19.1	23.3	405.3	443.7	213.5	235.1
65 years and over	54.9	74.2	22.8	31.4	729.0	894.8	342.6	422.1

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[1] Includes age not stated.

[2] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.

NOTES: Excludes newborn infants. Rates are based on the civilian noninstitutionalized population.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Hospital Discharge Survey.

Table 42. Discharges from and days of care in short-stay hospitals, according to selected characteristics: United States, 1974 and 1979

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Characteristic	Discharges[1]		Days of care[1]	
	1974	1979	1974	1979
	Number per 1,000 population			
Total[2,3,4]	125.7	121.6	1,110.9	997.4
Age				
Under 17 years	68.7	64.4	396.0	357.7
17-44 years	115.9	108.9	887.6	749.7
45-64 years	174.0	166.3	1,780.2	1,562.1
65 years and over	254.1	269.9	2,968.3	2,916.6
Sex[2]				
Male	123.3	117.2	1,214.5	1,038.9
Female	128.6	126.1	1,020.0	961.6
Race[2]				
White	126.0	120.9	1,072.4	957.3
Black	127.8	137.3	1,475.5	1,426.2
Family income[2,5]				
Less than $7,000	160.9	163.0	1,717.3	1,490.0
$7,000-$9,999	141.8	139.2	1,218.7	1,280.8
$10,000-$14,999	137.3	127.4	1,130.1	1,101.4
$15,000-$24,999	118.7	110.1	1,062.1	808.7
$25,000 or more	102.7	107.2	805.9	808.1
Geographic area[2]				
Northeast	107.9	108.9	1,074.3	978.9
North Central	133.7	126.5	1,166.4	977.9
South	139.8	138.2	1,199.6	1,143.7
West	114.2	100.8	922.8	779.1
Location of residence[2]				
Within SMSA	116.1	114.1	1,096.0	974.1
Outside SMSA	147.0	137.7	1,142.9	1,049.5

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[1] Excluding deliveries.

[2] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.

[3] Includes all other races not shown separately.

[4] Includes unknown family income.

[5] Family income categories for 1979. Corresponding income categories in 1973, adjusting for inflation, were: less than $5,000; $5,000-$6,999; $7,000-$9,999; $10,000-$14,999; and $15,000 or more.

SOURCE: Division of Health Interview Statistics, National Center for Health Statistics: Data from the National Health Interview Survey.

Table 43. Operations for inpatients discharged from non-Federal short-stay hospitals, according to sex, age, leading surgical category, and ICDA code: United States, 1974 and 1979

(Data are based on a sample of hospital records)

Sex, age, and leading surgical category	ICDA codes[1]		Operations			
	Eighth Revision	Ninth Revision	1974	1979[2]	1974	1979[2]
			Number in thousands		Number per 1,000 population	
Both sexes[3]						
Total[4,5]	...	...	19,268	21,187	91.2	93.7
Biopsy	A1-A2	(6)	1,023	1,328	4.8	5.8
Dilation and curettage of uterus	70.3-74.7	69.01, 69.09	1,043	994	4.9	4.3
Hysterectomy	69.1-69.5	68.3, 68.7	695	639	3.2	2.7
Tonsillectomy with or without adenoidectomy	21.1-21.2	28.2-28.3	808	500	4.1	2.5
Repair of inguinal hernia	38.2-38.3	53.0-53.1	524	500	2.6	2.3
Male						
Under 15 years[4]	...	...	1,317	1,092	47.4	42.7
Tonsillectomy, with or without adenoidectomy	21.1-21.2	28.2-28.3	296	152	10.6	6.0
Myringotomy	17.0	20.0	111	115	4.0	4.5
Repair of inguinal hernia	38.2-38.3	53.0-53.1	91	76	3.3	3.0
Closed reduction of fracture without fixation	[7]82.0	79.0	73	44	2.6	1.7
Appendectomy[8]	41.1	47.0	57	43	2.1	1.7
15-44 years[4]	...	...	2,458	2,902	56.8	60.2
Repair of inguinal hernia	38.2-38.3	53.0-53.1	112	122	2.6	2.5
Excision of semilunar cartilage of knee joint	86.5	80.6	80	91	1.8	1.9
Appendectomy[8]	41.1	47.0	88	97	2.0	2.0
Suture of skin or mucous membrane	92.5	86.5	78	89	1.8	1.9
Biopsy	A1-A2	(6)	73	91	1.7	1.9
45-64 years[4]	...	...	1,963	2,186	96.1	105.2
Repair of inguinal hernia	38.2-38.3	53.0-53.1	163	138	8.0	6.7
Biopsy	A1-A2	(6)	121	177	5.9	8.5
Cardiac catheterization	30.2	37.2	67	118	3.3	5.7
Prostatectomy	58.1-58.3	60.2-60.6	70	71	3.5	3.4
Excision of lesion of skin and subcutaneous tissue	92.1-92.2	86.3-86.4	63	52	3.1	2.5

See footnotes at end of table.

Table 43. Operations for inpatients discharged from non-Federal short-stay hospitals, according to sex, age, leading surgical category, and ICDA code: United States, 1974 and 1979—Continued

(Data are based on a sample of hospital records)

Sex, age, and leading surgical category	ICDA codes[1]		Operations			
	Eighth Revision	Ninth Revision	1974	1979[2]	1974	1979[2]
Male—Con.			Number in thousands		Number per 1,000 population	
65 years and over[4]	...	...	1,420	2,000	165.4	207.6
Prostatectomy	58.1-58.3	60.2-60.6	179	218	20.9	22.6
Biopsy	Al-A2	(6)	116	217	13.6	22.6
Repair of inguinal hernia	38.2-38.3	53.0-53.1	91	112	10.6	11.6
Extraction of lens	[7]14.4-14.6	13.1-13.6	77	108	8.9	11.2
Local excision and destruction of lesion of bladder	56.1-56.2	57.49-57.50	43	56	5.0	5.8
Female						
Under 15 years[4]	...	...	979	759	36.7	30.9
Tonsillectomy, with or without adenoidectomy	21.1-21.2	28.2-28.3	287	161	10.7	6.6
Myringotomy	17.0	20.0	82	87	3.1	3.5
Appendectomy[8]	41.1	47.0	44	36	1.7	1.5
Dilation of urethra	57.5	58.6	42	22	1.6	0.9
Closed reduction of fracture without fixation	[7]82.0	79.0	41	23	1.6	0.9
Adenoidectomy without tonsillectomy	21.3	28.6	28	31	1.0	1.3
15-44 years[4]	...	...	6,448	6,889	140.2	135.8
Dilation and curettage of uterus	70.3, 74.7	69.01, 69.09	703	704	15.3	13.9
Hysterectomy	69.1-69.5	68.3-68.7	418	407	9.1	8.0
Cesarean section	77.0-77.9	74.0-74.2, 74.4, 74.9	285	592	6.2	11.7
Ligation and division of fallopian tubes, bilateral	68.5	66.2, 66.3	321	599	7.0	11.8
Biopsy	Al-A2	(6)	296	287	6.4	5.6
Oophorectomy, salpingo-oophorectomy	67.2-67.5	65.3-65.6	247	267	5.4	5.3
45-64 years[4]	...	...	3,064	3,074	136.5	135.5
Biopsy	Al-A2	(6)	254	294	11.3	12.9
Dilation and curettage of uterus	70.3, 74.7	69.01, 69.09	290	247	12.9	10.9
Hysterectomy	69.1-69.5	68.3-68.7	236	187	10.5	8.2
Oophorectomy, salpingo-oophorectomy	67.2-67.5	65.3-65.6	163	149	7.2	6.6
Cholecystectomy	43.5	51.2	117	109	5.2	4.8

See footnotes at end of table.

Table 43. Operations for inpatients discharged from non-Federal short-stay hospitals, according to sex, age, leading surgical category, and ICDA code: United States, 1974 and 1979—Continued

(Data are based on a sample of hospital records)

Sex, age, and leading surgical category	ICDA codes[1]		Operations			
	Eighth Revision	Ninth Revision	1974	1979[2]	1974	1979[2]
			Number in thousands		Number per 1,000 population	
Female—Con.						
65 years and over[4]	...	...	1,605	2,286	132.0	166.5
Biopsy	A1-A2	(6)	131	222	10.8	16.1
Extraction of lens	[7]14.4-14.6	13.1-13.6	133	198	10.9	14.4
Reduction of fracture with fixation	[7]82.2	78.5, 79.1, 79.3	117	116	9.6	8.4
Cholecystectomy	43.5	51.2	52	77	4.3	5.6
Excision of lesion of skin and subcutaneous tissue	92.1-92.2	86.3-86.4	41	46	3.4	3.4
Dilation and curettage of uterus	70.3, 74.7	69.01, 69.09	45	39	3.7	2.8

[1] Surgical groupings and code number inclusions are based on the Eighth Revision International Classification of Diseases, Adapted for Use in the United States and the Ninth Revision International Classification of Diseases, Clinical Modification.

[2] In 1979, there was an approximate 400,000 increase in operations because of the coding of 4 operations per discharge, compared with 3 operations in 1970-78.

[3] Age adjusted by the direct method to the 1970 civilian noninstitutionalized population, using 4 age intervals.

[4] Includes operations not listed in table.

[5] For 1974 data, includes data for which sex was not stated.

[6] Include data only for the following codes: 01.11-01.15; 03.32; 04.11-04.12; 05.11; 06.11-06.13; 07.11-07.17; 08.11; 09.11-09.12; 10.21; 11.22; 12.22; 15.01; 16.23; 18.12; 20.32; 21.22; 22.11; 24.11-24.12; 25.01-25.02; 26.11; 27.21-27.24; 28.11; 29.12; 31.43-31.44; 33.24-33.27; 34.23-34.27; 37.24-37.25; 38.21; 40.11; 41.31-41.33; 42.24; 44.14-44.15; 45.14-45.15; 45.25-45.27; 48.24-48.26; 49.22-49.23; 50.11-50.12; 51.12-51.13; 52.11-52.12; 54.22-54.23; 55.23-55.24; 56.32-56.33; 57.33-57.34; 58.23-58.24; 59.21; 60.11-60.15; 61.11; 62.11-62.12; 63.01; 64.11; 65.11-65.12; 66.11; 67.11-67.12; 68.13-68.14; 70.23-70.24; 71.11; 76.11; 77.40-77.49; 80.30-80.39; 83.21; 85.11-85.12; 86.11.

[7] These codes are modifications of ICDA codes for use in the National Hospital Discharge Survey.

[8] Limited to estimated number of appendectomies, excluding those performed incidental to other abdominal surgery.

NOTE: Excludes newborn infants. Rates are based on the civilian noninstitutionalized population.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Hospital Discharge Survey.

Table 44. Nursing home residents, according to selected functional status and age: United States, 1973-74 and 1977

(Data are based on a sample of nursing homes)

Functional status	1973-74[1]					1977				
	All ages	Under 65 years	65-74 years	75-84 years	85 years and over	All ages	Under 65 years	65-74 years	75-84 years	85 years and over
	Number of residents									
All residents	1,075,800	114,300	163,100	384,900	413,600	1,303,100	177,100	211,400	464,700	449,900
	Percent distribution									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Dressing										
Independent	29.3	34.8	34.4	30.2	25.0	30.6	44.8	38.8	27.5	24.2
Requires assistance, includes those who do not dress	70.8	65.2	65.6	69.9	75.1	69.4	55.2	61.2	72.5	75.8
Using toilet room										
Independent	47.5	56.4	53.6	48.0	42.2	47.5	61.8	53.1	45.7	41.0
Requires assistance	30.8	21.6	27.3	31.5	34.1	42.5	28.1	37.8	44.7	48.0
Does not use toilet room	21.7	22.0	19.1	20.5	23.7	10.1	10.1	9.1	9.6	11.0
Mobility										
Walks independently	48.6	58.2	55.4	49.6	42.2	33.9	53.6	43.2	33.2	22.5
Walks with assistance	20.2	11.1	15.5	20.4	24.4	28.8	15.7	21.4	30.5	35.6
Chairfast	26.5	24.8	24.9	25.9	28.2	32.0	25.5	30.5	31.5	35.9
Bedfast	4.7	5.9	4.1	4.1	5.2	5.3	5.2	5.0	4.9	6.1
Continence										
No difficulty controlling bowel or bladder	66.2	72.6	70.9	66.8	61.9	54.7	68.0	62.4	52.9	47.8
Difficulty controlling bowel	1.1	*0.8	*1.2	1.1	1.2	3.7	3.0	3.7	4.0	3.8
Difficulty controlling bladder	4.2	2.4	4.4	4.2	4.7	9.0	5.8	6.5	9.4	11.1
Difficulty controlling both bowel and bladder	28.1	23.4	23.0	27.5	31.9	25.9	16.8	20.6	26.9	30.8
Ostomy in either bowel or bladder	0.4	*0.8	*0.4	*0.4	*0.3	6.7	6.4	6.8	6.9	6.5

See footnotes at end of table.

Table 44. Nursing home residents, according to selected functional status and age: United States, 1973-74 and 1977—Continued

(Data are based on a sample of nursing homes)

Functional status	1973-74[1]					1977				
	All ages	Under 65 years	65-74 years	75-84 years	85 years and over	All ages	Under 65 years	65-74 years	75-84 years	85 years and over
	Percent distribution									
Eating										
Independent	65.2	67.0	68.1	66.0	62.8	67.4	73.8	72.9	66.2	63.5
Requires assistance, includes those who are tube or intravenously fed	34.8	33.0	31.9	34.0	37.2	32.6	26.2	27.1	33.8	36.5
Vision										
Not impaired	53.5	70.6	62.3	53.8	45.0	67.2	81.0	75.4	67.9	57.2
Partially impaired	33.7	21.7	28.8	35.0	37.6	19.0	11.0	13.4	19.6	24.1
Severely impaired	10.0	5.0	6.3	8.9	14.0	6.6	2.2	3.3	6.1	10.4
Completely lost	2.8	2.7	2.6	2.3	3.5	3.0	2.2	2.6	2.6	3.8
Unknown	...	...	...	...	...	4.3	3.8	5.3	3.9	4.5
Hearing										
Not impaired	67.8	88.4	80.3	70.0	55.2	69.5	87.6	81.0	71.6	54.9
Partially impaired	26.1	9.2	17.0	25.5	34.8	21.7	6.6	11.4	21.2	33.1
Severely impaired	5.1	1.6	1.9	3.8	8.7	4.3	*0.4	1.9	3.0	8.4
Completely lost	1.0	*0.8	*0.8	0.7	1.4	0.7	*1.1	*0.7	*0.6	*0.7
Unknown	...	...	...	...	...	3.7	4.4	5.0	3.6	3.0

[1] Excludes residents in personal care or domiciliary care homes.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Unpublished data from the National Nursing Home Survey.

Table 45. Nursing home and personal care home residents 65 years of age and over, and number per 1,000 population, according to sex, and race: United States, 1963, 1969, 1973-74, and 1977

(Data are based on a sample of nursing homes)

Year and age	Total	Sex		Race		Total	Sex		Race	
		Male	Female	White[1]	All other		Male	Female	White[1]	All other
	Number of residents					Number per 1,000 population				
1963										
65 years and over	445,600	141,000	304,500	431,700	13,800	25.4	18.1	31.1	26.6	10.3
65-74 years	89,600	35,100	54,500	84,400	5,200	7.9	6.8	8.8	8.1	5.9
75-84 years	207,200	65,200	142,000	202,000	5,300	39.6	29.1	47.5	41.7	13.8
85 years and over	148,700	40,700	108,000	145,400	3,300	148.4	105.6	175.1	157.7	41.8
1969										
65 years and over	722,200	207,100	515,200	695,000	27,300	37.1	25.0	46.1	38.8	17.6
65-74 years	138,500	52,200	86,300	129,500	9,000	11.6	9.9	12.9	11.7	9.6
75-84 years	321,800	90,800	231,100	310,900	10,900	51.7	36.0	62.3	54.1	22.9
85 years and over	261,900	64,100	197,800	254,500	7,400	203.2	130.8	247.6	221.9	52.4
1973-74[2]										
65 years and over	961,500	265,700	695,800	920,600	40,900	45.1	30.2	55.5	47.3	21.9
65-74 years	163,100	65,100	98,100	150,100	13,000	12.3	11.3	13.1	12.5	10.6
75-84 years	384,900	102,300	282,600	369,700	15,200	59.4	40.8	71.1	61.9	30.1
85 years and over	413,600	98,300	315,300	400,800	12,800	253.7	180.4	290.6	269.0	91.4
1977[3]										
65 years and over	1,126,000	294,000	832,000	1,059,900	66,100	47.9	30.7	59.7	49.7	30.4
65-74 years	211,400	80,200	131,200	187,500	23,800	14.5	12.7	15.9	14.2	16.8
75-84 years	464,700	122,100	342,600	443,200	21,500	68.0	47.4	80.6	70.6	38.6
85 years and over	449,900	91,700	358,200	429,100	20,800	216.4	140.0	251.5	229.0	102.0

[1] Includes Hispanics.
[2] Excludes residents in personal care homes.
[3] Includes residents in domiciliary care homes.

SOURCES: National Center for Health Statistics: Characteristics of residents in institutions for the aged and chronically ill, United States, April-June 1963, by G. S. Wunderlich. Vital and Health Statistics. Series 12-No. 2. DHEW Pub. No. (PHS) 1000. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1965; Measures of chronic illness among residents of nursing and personal care homes, United States, by D. K. Ingram. Vital and Health Statistics. Series 12-No. 24. DHEW Pub. No. (HRA) 74-1709. Health Resources Administration. Washington. U.S. Government Printing Office, Mar. 1974; Unpublished data from the National Nursing Home Survey.

Table 46. Additions to mental health facilities and percent change, according to service setting and type of facility: United States, 1971 and 1977

(Data are based on reporting by facilities)

Type of facility	Service setting								
	Inpatient			Outpatient			Day treatment		
	1971	1977	Percent change 1971-77	1971	1977	Percent change 1971-77	1971	1977	Percent change 1971-77
	Number of additions			Number of additions			Number of additions		
All facilities	1,336,312	1,588,964	18.9	1,378,822	2,350,185	70.4	75,545	170,591	125.8
Non-Federal psychiatric hospitals	561,923	552,854	-1.6	147,383	141,265	-4.2	18,448	14,539	-21.2
State and county hospitals	474,923	414,703	-12.7	129,133	107,692	-16.6	16,554	10,697	-35.4
Private hospitals	87,000	138,151	58.8	18,250	33,573	84.0	1,894	3,842	102.9
Veterans Administration hospitals[1]	134,065	183,461	36.8	51,645	120,940	134.2	4,023	6,978	73.5
Non-Federal general hospital psychiatric units	519,926	552,437	6.3	282,677	230,412	-18.5	11,563	12,724	10.0
Government	215,158	135,460	-37.0	139,077	107,186	-22.9	4,291	3,480	-18.9
Private	304,768	416,977	36.8	143,600	123,226	-14.2	7,272	9,244	27.1
Residential treatment centers for emotionally disturbed children	11,148	15,152	35.9	10,156	18,155	78.8	994	3,147	216.6
Federally-funded community mental health centers	75,900	257,347	239.1	335,648	876,121	161.0	21,092	102,493	385.9
Freestanding psychiatric outpatient clinics	-	-	-	484,677	861,411	77.7	10,642	21,149	98.7
Government	-	-	-	273,358	332,364	21.6	7,737	8,059	4.2
Private	-	-	-	211,319	529,047	150.4	2,905	13,090	350.6
Other mental health facilities	33,350	27,713	-16.9	66,636	101,881	52.9	8,783	9,561	8.9

[1] Includes Veterans Administration neuropsychiatric hospitals and Veterans Administration general hospitals with separate psychiatric modalities.

SOURCE: National Institute of Mental Health: Unpublished data from the Division of Biometry and Epidemiology.

Table 47. Persons employed in the health service industry, according to place of employment: United States, 1970-80

(Data are based on household interviews of a sample of the civilian noninstitutionalized population)

Place of employment	Year						
	1970[1]	1975	1976	1977	1978	1979	1980
	Number of persons in thousands						
Total	4,246	5,865	6,122	6,328	6,673	6,849	7,186
Offices of physicians	477	607	641	677	753	755	756
Offices of dentists	222	327	325	321	360	385	407
Offices of chiropractors[2]	19	30	27	31	33	36	40
Hospitals	2,690	3,394	3,568	3,645	3,781	3,843	3,947
Convalescent institutions	509	884	945	949	1,009	1,035	1,185
Offices of other health practitioners	42	60	68	75	83	84	45
Other health service sites	288	563	548	632	687	747	806

[1] April 1, derived from decennial census; all other data years are July 1 estimates.

[2] Data for 1977-80 are from the American Chiropractic Association; data for the preceding years are from the U.S. Bureau of Labor Statistics.

NOTE: Totals exclude persons in health-related occupations who are working in nonhealth industries, as classified by the U.S. Bureau of the Census, such as pharmacists employed in drugstores, school nurses, and nurses working in private households.

SOURCES: U.S. Bureau of the Census: 1970 Census of Population, occupation by industry. Subject Reports. Final Report PC(2)-7C. Washington. U.S. Government Printing Office, Oct. 1972; U.S. Bureau of Labor Statistics: Employment and Earnings, March 1977, January 1978, January 1979, January 1980, and January 1981. Vol. 24, No. 3, Vol. 25, No. 1, Vol. 26, No. 1, Vol. 27, No. 1, and Vol. 28, No. 1. Washington. U.S. Government Printing Office, Mar. 1977, Jan. 1978, Jan. 1979, Jan. 1980, and Jan. 1981; Unpublished data; American Chiropractic Association: Unpublished data.

Table 48. Professionally active physicians (M.D.'s and D.O.'s), according to type of physician, and number per 10,000 population: United States and outlying U.S. areas, selected 1950-80 estimates and 1985, 1990, and 2000 projections

(Data are based on reporting by physicians and medical schools)

Year	Type of physician			Professionally active physicians per 10,000 population
	Total	Doctors of medicine (M.D.)	Doctors of osteopathy (D.O.)	
	Number of physicians			
1950	219,900	209,000	10,900	14.2
1960	259,500	247,300	12,200	14.2
1970	323,200	311,200	12,300	15.5
1971	334,100	322,000	12,100	15.9
1972	345,000	332,400	12,600	16.3
1973	350,100	337,000	13,100	16.4
1974	362,500	348,900	13,600	16.8
1975	378,600	364,500	14,100	17.4
1976	390,600	376,100	14,700	17.9
1977	395,200	380,200	15,400	17.9
1978	419,520	403,420	16,100	18.8
1979	433,550	416,680	16,870	19.3
1980	449,500	432,400	17,100	20.2
1985	523,900	502,000	21,900	22.5
1990	591,200	563,300	27,900	24.3
2000	704,700	665,700	39,000	27.1

NOTES: The population for selected years 1950-80 includes residents in the 50 States, District of Columbia, and civilians in Puerto Rico and other U.S. outlying areas; U.S. citizens in foreign countries; and the Armed Forces in the United States and abroad. For 1985 and 1990, the Series II projections of the total population from the U.S. Bureau of the Census are used. Estimation and projection methods used are from the Bureau of Health Professions. The numbers of M.D.'s differ from American Medical Association figures because a variant proportion of the physicians not classified by specialty is allocated into the totals.

SOURCES: Bureau of Health Manpower: A Report to the President and Congress on the Status of Health Professions Personnel in the United States. DHEW Pub. No. (HRA) 78-93. Health Resources Administration. Hyattsville, Md., Aug. 1978; Bureau of Health Professions, Health Resources Administration: Unpublished data; U.S. Bureau of the Census: Current Population Reports. Series P-25, Nos. 336, 603, 704, 731, and 803. Washington. U.S. Government Printing Office, Apr. 1966, July 1975, July 1977, Sept. 1978, and June 1979; Unpublished data.

Table 49. Physicians (M.D.'s), according to activity: United States, selected years 1970-79

(Data are based on reporting by physicians)

Activity	1970	1975	1976	1977	1978	1979
	Number of physicians					
Doctors of medicine	328,020	388,626	404,338	416,645	432,434	449,327
Professionally active physicians	304,926	335,608	343,876	359,515	371,343	389,157
Non-Federal	278,855	309,410	318,089	340,603	352,390	371,788
Patient care	252,778	285,345	292,152	312,872	322,835	338,328
Office-based practice	187,637	211,776	213,117	229,208	237,071	246,946
General practice[1]	50,415	45,863	45,503	44,548	44,649	46,220
Other specialty	137,222	165,913	167,614	184,660	192,422	200,726
Hospital-based practice	65,141	73,569	79,035	83,664	85,764	91,382
Residents[2]	45,514	53,150	58,482	58,517	56,866	60,964
Full-time hospital staff	19,627	20,419	20,553	25,147	28,898	30,418
Other professional activity[3]	26,077	24,065	25,937	27,731	29,555	33,460
Federal	26,071	26,198	25,787	18,912	18,953	17,369
Patient care	20,566	22,325	22,086	15,774	15,777	14,257
Office-based practice	2,819	1,841	1,652	902	865	608
General practice[1]	906	557	519	238	231	177
Other specialty	1,913	1,284	1,133	664	634	431
Hospital-based practice	17,747	20,484	20,434	14,872	14,912	13,649
Residents[2]	5,173	4,089	3,934	3,527	3,297	2,793
Full-time hospital staff	12,574	16,395	16,500	11,345	11,615	10,856
Other professional activity[3]	5,505	3,873	3,701	3,138	3,176	3,112
Inactive physicians	19,533	21,360	22,024	28,231	26,698	28,151
Not classified[4]	357	25,790	29,681	17,953	25,102	23,059
Unknown[5]	3,204	5,868	8,757	10,946	9,291	8,960

[1] Includes general practice and family practice.
[2] Includes interns and residents, all years.
[3] Includes medical teaching, administration, research, and other.
[4] Information not available.
[5] Physicians with unknown address.

NOTE: Federal and non-Federal doctors of medicine (M.D.'s) in the 50 States and the District of Columbia are included.

SOURCES: Haug, J. N., Roback, G. A., and Martin, B. C.: Distribution of Physicians in the United States, 1970. Chicago. American Medical Association, 1971. (Copyright 1971: Used with the permission of the American Medical Association.); Goodman, L. J., and Mason, H. R.: Physician Distribution and Medical Licensure in the U.S., 1975. Chicago. American Medical Association, 1976. (Copyright 1976: Used with the permission of the American Medical Association.); Goodman, L. J.: Physician Distribution and Medical Licensure in the U.S., 1976. Chicago. American Medical Association, 1977. (Copyright 1977: Used with the permission of the American Medical Association.); Department of Statistical Analysis: Physician Distribution and Medical Licensure in the U.S., 1977. Chicago. American Medical Association, 1979. (Copyright 1979: Used with the permission of the American Medical Association.); Department of Statistical Analysis: Physician Distribution and Medical Licensure in the U.S., 1978. Chicago. American Medical Association, 1980. (Copyright 1980: Used with the permission of the American Medical Association.); Wunderman, L. E.: Physician Distribution and Medical Licensure in the U.S., 1979. Chicago. American Medical Association, 1981. (Copyright 1981: Used with the permission of the American Medical Association.)

Table 50. Professionally active physicians (M.D.'s), according to primary specialty: United States, selected years 1970-79

(Data are based on reporting by physicians)

Primary specialty	Year					
	1970	1975	1976	1977	1978	1979
	Number of physicians					
Professionally active physicians	304,926	335,608	343,876	359,515	371,343	389,157
Primary care	115,505	128,745	134,051	139,248	141,610	151,527
General practice[1]	56,804	53,714	54,631	54,361	55,414	57,312
Internal medicine	41,196	53,712	57,312	61,278	62,056	67,989
Pediatrics	17,505	21,319	22,108	23,609	24,140	26,226
Other medical specialties	17,127	18,743	18,702	19,656	22,277	23,278
Dermatology	3,937	4,594	4,755	4,844	5,032	5,410
Pediatric allergy	388	439	469	485	431	448
Pediatric cardiology	471	527	537	563	575	620
Internal medicine subspecialties[2]	12,331	13,183	12,941	13,764	16,239	16,800
Surgical specialties	84,545	94,776	97,416	100,059	101,216	106,408
General surgery	29,216	31,173	31,899	32,014	31,699	32,844
Neurological surgery	2,537	2,898	2,959	3,049	3,071	3,239
Obstetrics and gynecology	18,498	21,330	21,908	23,038	23,591	24,828
Ophthalmology	9,793	11,011	11,326	11,483	11,798	12,486
Orthopedic surgery	9,467	11,267	11,689	12,223	12,553	13,419
Otolaryngology	5,305	5,670	5,788	5,910	6,040	6,339
Plastic surgery	1,583	2,224	2,337	2,509	2,610	2,867
Colon and rectal surgery	663	655	667	652	673	716
Thoracic surgery	1,779	1,960	2,020	2,131	2,025	2,198
Urology	5,704	6,588	6,823	7,050	7,156	7,472
Other specialties	87,749	93,344	93,707	100,552	106,240	107,944
Anesthesiology	10,725	12,741	13,074	13,815	14,137	15,266
Neurology	3,027	4,085	4,374	4,577	4,873	5,335
Pathology	10,135	11,603	11,815	12,260	12,517	13,206
Forensic pathology	193	186	203	206	232	232
Psychiatry	20,901	23,683	24,196	24,689	25,379	26,614
Child psychiatry	2,067	2,557	2,618	2,877	2,897	3,134
Physical medicine and rehabilitation	1,443	1,615	1,665	1,742	1,851	2,027
Radiology	10,380	11,417	11,627	12,062	11,495	11,621
Diagnostic radiology	1,941	3,500	3,794	4,236	5,388	6,490
Therapeutic radiology	855	1,161	1,202	1,305	1,389	1,509
Miscellaneous[3]	26,082	20,796	19,139	22,783	26,082	22,510

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[1] Includes general practice and family practice.

[2] Includes gastroenterology, pulmonary diseases, allergy, and cardiovascular diseases.

[3] Includes occupational medicine, general preventive medicine, aerospace medicine, public health, other specialties not listed, and unspecified specialties.

NOTE: Active Federal and non-Federal doctors of medicine (M.D.'s) in the 50 States and the District of Columbia are included. Physicians not classified, inactive physicians, and physicians with unknown address in the United States are excluded. For 1979, this includes 23,059 physicians not classified, 28,151 physicians inactive, and 8,960 physicians with unknown address.

SOURCES: Haug, J. N., Roback, G. A., and Martin, B. C.: Distribution of Physicians in the United States, 1970. Chicago. American Medical Association, 1971. (Copyright 1971: Used with the permission of the American Medical Association.); Goodman, L. J., and Mason, H. R.: Physician Distribution and Medical Licensure in the U.S., 1975. Chicago. American Medical Association, 1976. (Copyright 1976: Used with the permission of the American Medical Association); Goodman, L. J.: Physician Distribution and Medical Licensure in the U.S., 1976. Chicago. American Medical Association, 1977. (Copyright 1977: Used with the permission of the American Medical Association.); Department of Statistical Analysis: Physician Distribution and Medical Licensure in the U.S., 1977. Chicago. American Medical Association, 1979. (Copyright 1979: Used with the permission of the American Medical Association.); Department of Statistical Analysis: Physician Distribution and Medical Licensure in the U.S., 1978. Chicago. American Medical Association, 1980. (Copyright 1980: Used with the permission of the American Medical Association.); Wunderman, L. E.: Physician Distribution and Medical Licensure in the U.S., 1979. Chicago. American Medical Association, 1981. (Copyright 1981: Used with permission of the American Medical Association.)

Table 51. Active non-Federal physicians (M.D.'s) per 10,000 civilian population, according to geographic region, primary specialty, and activity: United States, 1974 and 1979

(Data are based on reporting by physicians)

Year, specialty, and activity	United States	Geographic region			
		Northeast	North Central	South	West
	Number of physicians per 10,000 civilian population				
1974					
Total[1]	14.4	18.3	12.4	12.0	16.4
Patient care	13.2	16.5	11.5	11.1	15.1
Office based	9.7	10.9	8.4	8.5	12.1
Hospital based	3.5	5.6	3.1	2.6	3.0
Other professional activities[2]	1.2	1.8	0.9	0.9	1.3
Primary care[3]	5.5	6.8	5.0	4.6	6.3
Patient care	5.2	6.3	4.8	4.4	5.9
Office based	4.0	4.4	3.7	3.5	4.9
Hospital based	1.2	1.9	1.1	0.9	1.0
Other professional activities[2]	0.3	0.5	0.3	0.3	0.4
Other medical specialties[4]	0.8	1.0	0.6	0.6	0.9
Patient care	0.7	0.9	0.5	0.5	0.8
Office based	0.6	0.8	0.4	0.5	0.7
Hospital based	0.1	0.1	0.1	0.1	0.1
Other professional activities[2]	0.1	0.1	0.1	0.1	0.1
Surgical specialties[5]	4.1	5.0	3.5	3.8	4.6
Patient care	4.0	4.8	3.4	3.6	4.5
Office based	3.1	3.4	2.6	2.9	3.8
Hospital based	0.9	1.4	0.8	0.8	0.7
Other professional activities[2]	0.1	0.2	0.1	0.1	0.2
1979					
Total[1]	17.0	20.9	14.8	15.0	19.0
Patient care	15.5	18.7	13.6	13.7	17.4
Office based	11.3	12.3	9.7	10.4	13.9
Hospital based	4.2	6.4	3.9	3.3	3.5
Other professional activities[2]	1.5	2.2	1.2	1.3	1.6
Primary care[3]	6.6	8.0	6.0	5.8	7.3
Patient care	6.1	7.3	5.6	5.4	6.7
Office based	4.4	4.7	4.0	4.0	5.3
Hospital based	1.7	2.5	1.6	1.4	1.4
Other professional activities[2]	0.5	0.7	0.4	0.5	0.5
Other medical specialties[4]	1.0	1.3	0.8	0.9	1.2
Patient care	0.8	1.1	0.6	0.8	1.0
Office based	0.7	0.9	0.5	0.7	0.9
Hospital based	0.1	0.2	0.1	0.1	0.1
Other professional activities[2]	0.2	0.3	0.1	0.1	0.2

See footnotes at end of table.

Table 51. Active non-Federal physicians (M.D.'s) per 10,000 civilian population, according to geographic region, primary specialty, and activity: United States, 1974 and 1979—Continued

(Data are based on reporting by physicians)

Year, specialty, and activity	United States	Geographic region			
		Northeast	North Central	South	West
	Number of physicians per 10,000 civilian population				
Surgical specialties[5]	4.7	5.5	4.0	4.5	5.1
Patient care	4.5	5.3	3.9	4.3	4.9
Office based	3.5	3.8	2.9	3.4	4.2
Hospital based	1.0	1.5	1.0	0.9	0.7
Other professional activities[2]	0.2	0.2	0.1	0.2	0.2

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[1] Includes active non-Federal doctors of medicine (M.D.'s) in all other specialties not shown separately and those not classified.

[2] Includes medical teaching, administration, research, and other professional activities.

[3] Includes general practice, internal medicine, and pediatrics.

[4] Includes dermatology, pediatric allergy, pediatric cardiology, gastroenterology, pulmonary diseases, allergy, and cardiovascular diseases.

[5] Includes general and neurological surgery, obstetrics and gynecology, ophthalmology, orthopedic surgery, otolaryngology, plastic surgery, colon and rectal surgery, thoracic surgery, and urology.

SOURCES: Roback, G. A., and Mason, H. R.: Physician Distribution and Medical Licensure in the U.S., 1974. Chicago. American Medical Association, 1975. (Copyright 1975: Used with the permission of the American Medical Association.); Department of Statistical Analysis: Physician Distribution and Medical Licensure in the U.S., 1979. Chicago. American Medical Association, 1981. (Copyright 1981: Used with the permission of the American Medical Association.); U.S. Bureau of the Census: Population estimates and projections. Current Population Reports. Series P-25, Nos. 727 and 876. Washington. U.S. Government Printing Office, July 1978 and Feb. 1980.

Table 52. Graduates of health professions schools and number of schools, according to profession: United States, selected 1950-79 estimates and 1980, 1990, and 2000 projections

(Data are based on reporting by health professions schools)

Year	Profession				
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy
			Number of graduates		
1950	5,553	373	2,565	961	—
1960	7,081	427	3,253	364	3,497
1970	8,367	432	3,749	445	4,758
1975	12,714	702	4,969	806	6,712
1978	14,393	963	5,324	980	7,785
1979	14,966	1,004	5,424	1,051	6,856
1980	15,346	1,029	5,216	1,077	7,070
1990	16,695	1,502	5,270	1,077	5,240
2000	16,523	1,486	5,120	1,077	5,110
			Number of schools		
1950	79	6	42	10	—
1960	86	6	47	10	76
1970	103	7	53	11	74
1975	114	9	59	12	73
1978	122	12	59	12	72
1979	125	14	60	13	72
1980	124	14	60	15	72
1990	126	14	60	15	72
2000	126	14	60	15	72

SOURCES: Bureau of Health Manpower: A Report to the President and Congress on the Status of Health Professions Personnel in the United States. DHEW Pub. No. (HRA) 78-93. Health Resources Administration. Hyattsville, Md., Aug. 1978; Unpublished data from Division of Health Professions Analysis, Bureau of Health Professions.

Table 53. Short-stay hospitals and beds, according to type of hospital and ownership: United States, 1974 and 1979

(Data are based on reporting by facilities)

Year and type of ownership	All short-stay hospitals	Community hospitals			All other hospitals			
		Total	General	Specialty	Total	General	Psychiatric	Other
1974				Number of hospitals				
All ownerships	6,693	6,113	5,980	133	580	422	118	40
Government	2,245	1,815	1,799	16	430	396	26	8
Federal	335	-	-	-	335	334	-	1
State-local	1,910	1,815	1,799	16	95	62	26	7
Proprietary	928	852	817	35	76	-	53	23
Nonprofit	3,520	3,446	3,364	82	74	26	39	9
1979								
All ownerships	6,525	5,939	5,799	140	586	387	146	53
Government	2,222	1,812	1,795	17	410	366	34	10
Federal	325	-	-	-	325	323	-	2
State-local	1,897	1,812	1,795	17	85	43	34	8
Proprietary	867	767	735	32	100	-	70	30
Nonprofit	3,436	3,360	3,269	91	76	21	42	13
1974				Number of beds				
All ownerships	1,049,701	945,489	935,046	10,443	104,212	91,175	10,813	2,224
Government	306,272	210,561	208,479	2,082	95,711	90,366	4,356	989
Federal	87,306	-	-	-	87,306	86,795	-	511
State-local	218,966	210,561	208,479	2,082	8,405	3,571	4,356	478
Proprietary	79,027	74,538	73,173	1,365	4,489	-	3,766	723
Nonprofit	664,402	660,390	653,394	6,996	4,012	809	2,691	512
1979								
All ownerships	1,096,322	992,624	979,811	12,813	103,698	87,064	13,234	3,400
Government	305,143	211,916	209,241	2,675	93,227	86,470	5,229	1,528
Federal	84,832	-	-	-	84,832	83,952	-	880
State-local	220,311	211,916	209,241	2,675	8,395	2,518	5,229	648
Proprietary	92,418	86,399	84,753	1,646	6,019	-	4,850	1,169
Nonprofit	698,761	694,309	685,817	8,492	4,452	594	3,155	703

NOTE: Community hospitals include all non-Federal short-stay hospitals classified by the American Hospital Association according to one of the following services: general medical and surgical; obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; other specialty; children's general; children's eye, ear, nose, and throat; children's rehabilitation; children's orthopedic; and children's other specialty.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

Table 54. Community hospital beds per 1,000 population and average annual rate of change, according to geographic division and State: United States, selected years 1940-79

(Data are based on reporting by facilities)

Geographic division and State	Year							Period			
	1940[1]	1950[1]	1960[2]	1970	1975	1978	1979	1940-60[1,2]	1960-70[2]	1970-75	1975-79
	Community hospital beds per 1,000 population[3]							Average annual rate of change			
United States-------	3.2	3.3	3.6	4.3	4.6	4.6	4.5	0.6	1.8	1.4	-0.5
New England----------	4.4	4.2	3.9	4.1	4.2	4.2	4.1	-0.6	0.5	0.5	-0.6
Maine------------------	3.0	3.2	3.4	4.7	4.7	4.8	4.7	0.6	3.3	-	-
New Hampshire-----------	4.2	4.2	4.4	4.0	4.2	4.0	3.9	0.2	-0.9	1.0	-1.8
Vermont-----------------	3.3	4.0	4.5	4.5	4.8	4.6	4.5	1.6	-	1.3	-1.6
Massachusetts-----------	5.1	4.8	4.2	4.4	4.6	4.5	4.4	-1.0	0.5	0.9	-1.1
Rhode Island------------	3.9	3.8	3.7	4.0	3.8	3.7	3.7	-0.3	0.8	-1.0	-0.7
Connecticut-------------	3.7	3.6	3.4	3.4	3.5	3.5	3.5	-0.4	-	0.6	-
Middle Atlantic-------	3.9	3.8	4.0	4.4	4.6	4.6	4.6	0.1	1.0	0.9	-
New York----------------	4.3	4.1	4.3	4.6	4.7	4.6	4.6	-	0.7	0.4	-0.5
New Jersey--------------	3.5	3.2	3.1	3.6	4.0	4.2	4.1	-0.6	1.5	2.1	0.6
Pennsylvania------------	3.5	3.8	4.1	4.7	4.7	4.8	4.8	0.8	1.4	-	0.5
East North Central----	3.2	3.2	3.6	4.4	4.7	4.7	4.7	0.6	2.0	1.3	-
Ohio--------------------	2.7	2.9	3.4	4.2	4.6	4.7	4.7	1.2	2.1	1.8	0.5
Indiana-----------------	2.3	2.6	3.1	4.0	4.4	4.5	4.4	1.5	2.6	1.9	-
Illinois----------------	3.4	3.6	4.0	4.7	4.9	5.0	5.0	0.8	1.6	0.8	0.5
Michigan----------------	4.0	3.3	3.3	4.3	4.5	4.4	4.4	-1.0	2.7	0.9	-0.6
Wisconsin---------------	3.4	3.7	4.3	5.2	5.1	5.1	4.9	1.2	1.9	-0.4	-1.0
West North Central----	3.1	3.7	4.3	5.7	5.8	5.9	5.9	1.6	2.9	0.3	0.4
Minnesota---------------	3.9	4.4	4.8	6.1	6.0	6.0	5.8	1.0	2.4	-0.3	-0.8
Iowa--------------------	2.7	3.2	3.9	5.6	6.0	5.8	5.7	1.9	3.7	1.4	-1.3
Missouri----------------	2.9	3.3	3.9	5.1	5.5	5.8	5.7	1.5	2.7	1.5	0.9
North Dakota------------	3.5	4.3	5.2	6.8	6.7	7.1	7.2	2.0	2.7	-0.3	1.8
South Dakota------------	2.8	4.4	4.5	5.6	5.5	5.5	5.4	2.4	2.2	-0.4	-0.5
Nebraska----------------	3.4	4.2	4.4	6.2	6.1	6.1	6.2	1.3	3.5	-0.3	0.4
Kansas------------------	2.8	3.4	4.2	5.4	5.7	5.8	5.8	2.0	2.5	1.1	0.4
South Atlantic--------	2.5	2.8	3.3	4.0	4.3	4.5	4.5	1.4	1.9	1.5	1.1
Delaware----------------	4.4	3.9	3.7	3.7	3.5	3.7	3.6	-0.9	-	-1.1	0.7
Maryland----------------	3.9	3.6	3.3	3.1	3.2	3.4	3.5	-0.8	-0.6	0.6	2.3
District of Columbia------	5.5	5.5	5.9	7.4	7.1	7.3	7.1	0.4	2.3	-0.8	-
Virginia----------------	2.2	2.5	3.0	3.7	4.1	4.1	4.1	1.6	2.1	2.1	-
West Virginia-----------	2.7	3.1	4.1	5.4	5.8	5.6	5.5	2.1	2.8	1.4	-1.3
North Carolina----------	2.2	2.6	3.4	3.8	4.0	4.2	4.2	2.2	1.1	1.0	1.2
South Carolina----------	1.8	2.4	2.9	3.7	3.9	3.9	3.8	2.4	2.5	1.1	-0.6
Georgia-----------------	1.7	2.0	2.8	3.8	4.4	4.6	4.6	2.5	3.1	3.0	1.1
Florida-----------------	2.8	2.9	3.1	4.4	4.9	5.1	5.2	0.5	3.6	2.2	1.5
East South Central----	1.7	2.1	3.0	4.4	4.9	5.1	5.1	2.9	3.9	2.2	1.0
Kentucky----------------	1.8	2.2	3.0	4.0	4.3	4.4	4.4	2.6	2.9	1.5	0.6
Tennessee---------------	1.9	2.3	3.4	4.7	5.4	5.5	5.6	3.0	3.3	2.8	0.9
Alabama-----------------	1.5	2.0	2.8	4.3	4.9	5.1	5.1	3.2	4.4	2.6	1.0
Mississippi-------------	1.4	1.7	2.9	4.4	4.9	5.2	5.2	3.7	4.3	2.2	1.5

See footnotes at end of table.

Table 54. Community hospital beds per 1,000 population and average annual rate of change, according to geographic division and State: United States, selected years 1940-79—Continued

(Data are based on reporting by facilities)

Geographic division and State	Year							Period			
	1940[1]	1950[1]	1960[2]	1970	1975	1978	1979	1940-60[1,2]	1960-70[2]	1970-75	1975-79
	Community hospital beds per 1,000 population[3]							Average annual rate of change			
West South Central	2.1	2.7	3.3	4.3	4.7	4.7	4.7	2.3	2.7	1.8	-
Arkansas	1.4	1.6	2.9	4.2	4.6	4.9	4.9	3.7	3.8	1.8	1.6
Louisiana	3.1	3.8	3.9	4.2	4.7	4.7	4.8	1.2	0.7	2.3	0.5
Oklahoma	1.9	2.5	3.2	4.5	4.6	4.6	4.6	2.6	3.5	0.4	-
Texas	2.0	2.7	3.3	4.3	4.7	4.7	4.7	2.5	2.7	1.8	-
Mountain	3.6	3.8	3.5	4.3	4.0	3.9	3.9	-0.1	2.1	-1.4	-0.6
Montana	4.9	5.3	5.1	5.8	5.2	5.7	5.8	0.2	1.3	-2.2	2.8
Idaho	2.6	3.4	3.2	4.0	3.9	3.7	3.7	1.0	2.3	-0.5	-1.3
Wyoming	3.5	3.9	4.6	5.5	4.5	3.9	3.7	1.4	1.8	-3.9	-4.8
Colorado	3.9	4.2	3.8	4.6	4.4	4.2	4.3	-0.1	1.9	-0.9	-0.6
New Mexico	2.7	2.2	2.9	3.5	3.4	3.2	3.2	0.4	1.9	-0.6	-1.5
Arizona	3.4	4.0	3.0	4.1	3.8	3.8	3.7	-0.6	3.2	-1.5	-0.7
Utah	3.2	2.9	2.8	3.6	3.2	3.2	3.0	-0.7	2.5	-2.3	-1.6
Nevada	5.0	4.4	3.9	4.2	4.3	4.1	4.3	-1.2	0.7	0.5	-
Pacific	4.1	3.2	3.1	3.7	3.9	3.6	3.6	-1.4	1.8	1.1	-2.0
Washington	3.4	3.6	3.3	3.5	3.4	3.2	3.1	-0.1	0.6	-0.6	-2.3
Oregon	3.5	3.1	3.5	4.0	3.9	3.6	3.6	-	1.3	-0.5	-2.0
California	4.4	3.3	3.0	3.8	4.0	3.8	3.7	-1.9	2.4	1.0	-1.9
Alaska	...	...	2.4	2.3	2.2	2.3	2.5	...	-0.4	-0.9	3.2
Hawaii	...	...	3.7	3.4	3.3	3.1	3.1	...	-0.8	-0.6	-1.6

[1] 1940 and 1950 data are estimated based on published figures.
[2] 1960 includes hospital units of institutions.
[3] Civilian population.

NOTE: Community hospitals include all non-Federal short-stay hospitals classified by the American Hospital Association according to one of the following services: general medical and surgical; obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; other specialty; children's general; children's eye, ear, nose, and throat; children's rehabilitation; children's orthopedic; and children's other specialty.

SOURCES: American Medical Association: Hospital service in the United States. JAMA 116(11): 1055-1144, 1941, and 146(2): 109-184, 1951. (Copyright 1941 and 1951: Used with the permission of the American Medical Association.); American Hospital Association: Hospitals. JAHA 35(15): 383-430, Aug. 1, 1961. (Copyright 1961: Used with the permission of the American Hospital Association.); Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory; U.S. Bureau of the Census: Current Population Reports. Series P-25, Nos. 72, 304, 460, 640, 642, 868, and 876. Washington. U.S. Government Printing Office, 1953, 1965, 1971, 1976, 1979, and 1980; Unpublished data.

Table 55. Occupancy rate in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1940-79

(Data are based on reporting by facilities)

Geographic division and State	Year						Period			
	1940[1]	1960[2]	1970	1975	1978	1979	1940-60[1,2]	1960-70[2]	1970-75	1975-79
	Percent of beds occupied						Average annual rate of change			
United States	69.9	74.7	77.3	74.2	73.2	73.6	0.3	0.3	-0.8	-0.2
New England	72.5	75.2	79.7	77.6	77.6	79.1	0.2	0.6	-0.5	0.5
Maine	72.4	73.2	73.0	71.1	71.7	74.2	0.1	-0.0	-0.5	1.1
New Hampshire	65.3	66.5	73.4	71.4	71.5	71.2	0.1	1.0	-0.6	-0.1
Vermont	68.8	68.5	76.3	70.7	72.2	72.3	-0.0	1.1	-1.5	0.6
Massachusetts	71.8	75.8	80.3	79.1	79.2	80.8	0.3	0.6	-0.3	0.5
Rhode Island	77.7	75.7	82.9	82.2	82.3	84.3	-0.1	0.9	-0.2	0.6
Connecticut	75.9	78.2	82.6	78.6	78.1	79.7	0.1	0.5	-1.0	0.3
Middle Atlantic	75.5	78.1	82.4	81.4	81.1	82.0	0.2	0.5	-0.2	0.2
New York	78.9	79.4	82.9	84.2	83.1	85.5	0.0	0.4	0.3	0.4
New Jersey	72.4	78.4	82.5	81.1	81.8	81.4	0.4	0.5	-0.3	0.1
Pennsylvania	71.3	76.0	81.5	77.2	77.9	77.4	0.3	0.7	-1.1	0.1
East North Central	71.0	78.4	79.5	77.2	75.4	75.7	0.5	0.1	-0.6	-0.5
Ohio	72.1	81.3	81.8	80.6	78.0	77.4	0.6	0.1	-0.3	-1.0
Indiana	68.5	79.6	80.3	76.4	75.7	76.7	0.8	0.1	-1.0	0.1
Illinois	73.1	76.0	79.3	75.7	74.9	74.6	0.2	0.4	-0.9	-0.4
Michigan	71.5	80.5	80.6	78.8	76.3	77.1	0.6	0.0	-0.5	-0.5
Wisconsin	65.2	73.9	73.2	71.5	69.6	71.5	0.6	-0.1	-0.5	-
West North Central	65.7	71.8	73.6	70.6	69.4	69.2	0.4	0.2	-0.8	-0.5
Minnesota	71.0	72.3	73.9	70.7	70.2	71.1	0.1	0.2	-0.9	0.1
Iowa	63.6	72.6	71.9	67.4	67.1	66.7	0.7	-0.1	-1.3	-0.3
Missouri	68.6	75.8	79.3	75.9	73.5	73.4	0.5	0.5	-0.9	-0.8
North Dakota	61.9	71.3	67.1	69.1	66.2	65.9	0.7	-0.6	0.6	-1.2
South Dakota	59.1	66.0	66.3	63.8	59.3	58.0	0.6	0.0	-0.8	-2.4
Nebraska	59.0	65.6	69.9	65.8	66.2	65.0	0.5	0.6	-1.2	-0.3
Kansas	60.4	69.1	71.4	69.9	68.3	67.8	0.7	0.3	-0.4	-0.8
South Atlantic	66.7	74.8	77.9	73.9	73.0	73.4	0.6	0.4	-1.0	-0.2
Delaware	59.2	70.2	78.8	81.0	80.6	81.7	0.9	1.2	0.6	0.2
Maryland	74.6	73.9	79.3	79.3	81.0	80.9	-0.0	0.7	-	0.5
District of Columbia	76.2	80.8	77.7	78.9	77.0	78.5	0.3	-0.4	0.3	-0.1
Virginia	70.0	78.0	81.1	77.4	74.5	75.9	0.5	0.4	-0.9	-0.5
West Virginia	62.1	74.5	79.3	75.3	72.3	74.9	0.9	0.6	-1.0	-0.1
North Carolina	64.6	73.9	78.5	77.4	75.7	75.8	0.7	0.6	-0.3	-0.5
South Carolina	69.1	76.9	76.4	74.2	74.1	75.3	0.5	-0.1	-0.6	0.4
Georgia	62.7	71.7	76.5	68.2	67.4	68.4	0.7	0.7	-2.3	0.1
Florida	57.5	73.9	76.2	70.2	70.3	69.4	1.3	0.3	-1.6	-0.3
East South Central	62.6	71.8	78.2	74.0	73.3	73.8	0.7	0.9	-1.1	-0.1
Kentucky	61.6	73.4	79.6	77.3	75.8	76.7	0.9	0.8	-0.6	-0.2
Tennessee	65.5	75.9	78.2	74.4	73.8	74.1	0.7	0.3	-1.0	-0.1
Alabama	59.0	70.8	80.0	72.6	72.5	72.8	0.9	1.2	-1.9	0.1
Mississippi	63.8	62.8	73.6	71.4	70.6	71.5	-0.1	1.6	-0.6	0.0

See footnotes at end of table.

Table 55. Occupancy rate in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1940-79—Continued

(Data are based on reporting by facilities)

Geographic division and State	Year						Period			
	1940[1]	1960[2]	1970	1975	1978	1979	1940-60[1,2]	1960-70[2]	1970-75	1975-79
	Percent of beds occupied						Average annual rate of change			
West South Central	62.5	68.7	73.2	69.1	67.5	67.6	0.5	0.6	-1.1	-0.5
Arkansas	55.6	70.0	74.4	70.3	68.9	68.6	1.2	0.6	-1.1	-0.6
Louisiana	75.0	67.9	73.6	68.8	68.4	68.4	-0.5	0.8	-1.3	-0.1
Oklahoma	54.5	71.0	72.5	69.3	66.5	66.7	1.3	0.2	-0.9	-1.0
Texas	59.6	68.2	73.0	69.0	67.2	67.4	0.7	0.7	-1.1	-0.6
Mountain	60.9	69.9	71.2	68.4	66.8	66.7	0.7	0.2	-0.8	-0.6
Montana	62.8	60.3	65.9	61.4	64.0	62.5	-0.2	0.9	-1.4	0.4
Idaho	65.4	55.9	66.1	68.2	65.9	65.0	-0.8	1.7	0.6	-1.2
Wyoming	47.5	61.1	63.1	55.9	54.6	54.2	1.3	0.3	-2.4	-0.8
Colorado	62.1	80.6	74.0	69.1	67.4	66.0	1.3	-0.9	-1.4	-1.1
New Mexico	47.8	65.1	69.8	63.6	65.0	64.3	1.6	0.7	-1.8	0.3
Arizona	61.2	74.2	73.3	73.5	71.3	73.6	1.0	-0.1	0.1	0.0
Utah	65.8	70.0	73.7	73.6	66.5	69.4	0.3	0.5	-0.0	-1.5
Nevada	67.9	70.7	72.7	67.2	66.1	63.9	0.2	0.3	-1.6	-1.3
Pacific	69.7	71.4	71.0	66.2	66.1	66.5	0.1	-0.1	-1.4	0.1
Washington	67.5	63.4	69.7	67.7	66.6	68.4	-0.3	1.0	-0.6	0.3
Oregon	71.2	65.8	69.3	66.6	65.8	65.8	-0.4	0.5	-0.8	-0.3
California	69.9	74.3	71.3	66.0	65.9	66.1	0.3	-0.4	-1.5	0.0
Alaska	...	53.8	59.1	63.3	60.5	59.7	...	0.9	1.4	-1.5
Hawaii	...	61.5	75.7	68.1	72.8	75.2	...	2.1	-2.1	2.5

[1] 1940 data are estimated based on published figures.
[2] 1960 includes hospital units of institutions.

NOTE: Community hospitals include all non-Federal short-stay hospitals classified by the American Hospital Association according to one of the following services: general medical and surgical; obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; other specialty; children's general; children's eye, ear, nose, and throat; children's rehabilitation; children's orthopedic; and children's other specialty.

SOURCES: American Medical Association: Hospital service in the United States. JAMA 116(11): 1055-1144, 1941. (Copyright 1941: Used with the permission of the American Medical Association.); American Hospital Association: Hospitals. JAHA 35(15): 383-430, Aug. 1, 1961. (Copyright 1961: Used with the permission of the American Hospital Association.); Division of Health Manpower and Facilities Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

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Table 56. Full-time equivalent employees per 100 average daily patients in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1960-79

(Data are based on reporting by facilities)

Geographic division and State	Year					Period		
	1960[1]	1970	1975	1978	1979	1960-70[1]	1970-75	1975-79
	Number of employees per 100 average daily patients					Average annual rate of change		
United States	226	302	349	379	388	2.9	2.9	2.7
New England	249	351	412	436	441	3.5	3.3	1.7
Maine	227	289	359	402	404	2.4	4.4	3.0
New Hampshire	240	310	347	383	399	2.6	2.3	3.6
Vermont	227	318	346	346	364	3.4	1.7	1.3
Massachusetts	252	365	436	456	458	3.8	3.6	1.2
Rhode Island	270	383	433	460	461	3.6	2.5	1.6
Connecticut	247	347	397	428	434	3.5	2.7	2.3
Middle Atlantic	225	311	352	372	377	3.3	2.5	1.7
New York	233	336	375	386	387	3.7	2.2	0.8
New Jersey	225	278	308	328	333	2.1	2.1	2.0
Pennsylvania	214	287	340	375	387	3.0	3.4	3.3
East North Central	226	299	343	379	392	2.8	2.8	3.4
Ohio	232	302	334	372	387	2.7	2.0	3.8
Indiana	216	280	320	351	363	2.6	2.7	3.2
Illinois	226	301	357	391	408	2.9	3.5	3.4
Michigan	239	313	364	401	412	2.7	3.1	3.1
Wisconsin	199	277	315	358	358	3.4	2.6	3.3
West North Central	212	273	305	335	346	2.6	2.2	3.2
Minnesota	220	273	296	317	328	2.2	1.6	2.6
Iowa	208	258	293	335	346	2.2	2.6	4.2
Missouri	217	289	326	357	370	2.9	2.4	3.2
North Dakota	177	254	273	299	298	3.7	1.5	2.2
South Dakota	188	247	294	343	339	2.8	3.5	3.6
Nebraska	220	276	298	310	328	2.3	1.5	2.4
Kansas	210	270	313	347	358	2.5	3.0	3.4
South Atlantic	217	295	343	368	376	3.1	3.1	2.3
Delaware	243	328	390	403	403	3.0	3.5	0.8
Maryland	237	354	391	401	400	4.1	2.0	0.6
District of Columbia	240	363	443	497	493	4.2	4.1	2.7
Virginia	193	289	323	333	360	4.1	2.2	2.7
West Virginia	198	255	298	335	339	2.6	3.2	3.3
North Carolina	196	277	319	350	359	3.5	2.9	3.0
South Carolina	185	257	302	338	352	3.3	3.3	3.9
Georgia	233	294	364	396	397	2.4	4.4	2.2
Florida	245	295	346	367	376	1.9	3.2	2.1
East South Central	227	275	306	328	336	1.9	2.2	2.4
Kentucky	229	276	292	316	324	1.9	1.1	2.6
Tennessee	231	284	315	333	343	2.1	2.1	2.2
Alabama	233	266	308	337	343	1.3	3.0	2.7
Mississippi	207	270	300	317	328	2.7	2.1	2.3

See footnote at end of table.

Table 56. Full-time equivalent employees per 100 average daily patients in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1960-79—Continued

(Data are based on reporting by facilities)

Geographic division and State	Year					Period		
	1960[1]	1970	1975	1978	1979	1960-70[1]	1970-75	1975-79
	Number of employees per 100 average daily patients					Average annual rate of change		
West South Central	225	297	346	372	379	2.8	3.1	2.3
Arkansas	209	274	318	329	349	2.7	3.0	2.4
Louisiana	218	292	354	373	393	3.0	3.9	2.6
Oklahoma	218	296	359	385	401	3.1	3.9	2.8
Texas	232	304	346	376	376	2.7	2.6	2.1
Mountain	226	299	364	402	410	2.8	4.0	3.0
Montana	216	247	301	291	300	1.4	4.0	-0.1
Idaho	255	281	321	359	364	1.0	2.7	3.2
Wyoming	217	251	344	416	434	1.5	6.5	6.0
Colorado	221	306	373	413	417	3.3	4.0	2.8
New Mexico	228	314	389	418	442	3.3	4.4	3.2
Arizona	222	327	381	432	426	3.9	3.1	2.8
Utah	243	304	388	439	447	2.3	5.0	3.6
Nevada	224	284	344	398	431	2.4	3.9	5.8
Pacific	243	327	401	454	468	3.0	4.2	3.9
Washington	263	313	382	422	433	1.8	4.1	3.2
Oregon	232	303	387	432	433	2.7	5.0	2.8
California	241	334	407	463	480	3.3	4.0	4.2
Alaska	220	301	385	456	445	3.2	5.0	3.7
Hawaii	226	278	357	389	385	2.1	5.1	1.9

[1] 1960 includes hospital units of institutions, but excludes students, interns, and residents.

NOTE: Community hospitals include all non-Federal short-stay hospitals classified by the American Hospital Association according to one of the following services: general medical and surgical; obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; other specialty; children's general; children's eye, ear, nose, and throat; children's rehabilitation; children's orthopedic; and children's other specialty.

SOURCES: American Hospital Association: Hospitals. JAHA 35(15): 383-430, Aug. 1, 1961. (Copyright 1961: Used with the permission of the American Hospital Association.); Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

Table 57. Outpatient visits per 1,000 patient days in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1970-79

(Data are based on reporting by facilities)

Geographic division and State	Year				Period	
	1970	1975	1978	1979	1970-75	1975-79
	Outpatient visits per 1,000 patient days				Average annual rate of change	
United States	568	738	769	749	5.4	0.4
New England	676	955	1,036	1,049	7.2	2.4
Maine	596	940	1,168	1,074	9.5	3.4
New Hampshire	811	1,070	1,234	1,331	5.7	5.6
Vermont	596	954	1,046	958	9.9	0.1
Massachusetts	704	940	1,031	1,042	6.0	2.6
Rhode Island	620	845	869	859	6.4	0.4
Connecticut	640	1,006	986	1,053	9.5	1.1
Middle Atlantic	647	906	912	896	7.0	-0.3
New York	658	896	913	877	6.4	-0.5
New Jersey	517	706	683	707	6.4	0.0
Pennsylvania	691	1,034	1,040	1,034	8.4	-
East North Central	513	732	762	754	7.4	0.7
Ohio	502	670	702	722	5.9	1.9
Indiana	484	741	775	771	8.9	1.0
Illinois	531	735	768	694	6.7	-1.4
Michigan	588	885	875	933	8.5	1.3
Wisconsin	381	573	662	624	8.5	2.2
West North Central	373	499	512	499	6.0	-
Minnesota	309	387	442	450	4.6	3.8
Iowa	348	525	573	599	8.6	3.4
Missouri	468	573	525	483	4.1	-4.2
North Dakota	150	211	267	258	7.1	5.2
South Dakota	314	308	421	344	-0.4	2.8
Nebraska	264	401	444	447	8.7	2.8
Kansas	494	724	681	652	7.9	-2.6
South Atlantic	547	697	668	666	5.0	-1.1
Delaware	674	1,036	945	919	9.0	-3.0
Maryland	809	991	910	849	4.1	-3.8
District of Columbia	749	924	841	1,006	4.3	2.1
Virginia	557	682	637	659	4.1	-0.9
West Virginia	635	792	747	709	4.5	-2.7
North Carolina	509	664	691	698	5.5	1.3
South Carolina	456	608	667	699	5.9	3.5
Georgia	489	679	716	699	6.8	0.7
Florida	442	570	502	496	5.2	-3.4
East South Central	401	498	502	473	4.4	-1.3
Kentucky	448	558	577	576	4.5	0.8
Tennessee	441	526	482	467	3.6	-2.9
Alabama	344	422	486	425	4.2	0.2
Mississippi	349	475	465	423	6.4	-2.9

See footnotes at end of table.

Table 57. Outpatient visits per 1,000 patient days in community hospitals and average annual rate of change, according to geographic division and State: United States, selected years 1970-79--Continued

(Data are based on reporting by facilities)

Geographic division and State	Year				Period	
	1970	1975	1978	1979	1970-75	1975-79
	Outpatient visits per 1,000 patient days				Average annual rate of change	
West South Central	442	528	578	569	3.6	1.9
Arkansas	306	432	484	457	7.1	1.4
Louisiana	693	756	900	894	1.8	4.3
Oklahoma	292	397	471	482	6.3	5.0
Texas	421	502	515	506	3.6	0.2
Mountain	525	781	951	945	8.3	4.9
Montana	337	538	726	646	9.8	4.7
Idaho	514	748	921	902	7.8	4.8
Wyoming	342	670	1,060	1,229	14.4	16.4
Colorado	532	856	910	819	10.0	-1.1
New Mexico	435	690	1,028	1,091	9.7	12.1
Arizona	648	780	950	911	3.8	4.0
Utah	677	1,015	1,359	1,383	8.4	8.0
Nevada	395	633	730	1,069	9.9	14.0
Pacific	923	935	1,085	966	0.3	0.8
Washington	538	816	894	879	8.7	1.9
Oregon	612	773	964	899	4.8	3.8
California	1,006	954	1,112	986	-1.1	0.8
Alaska	747	1,388	1,035	807	13.2	-12.7
Hawaii	1,230	1,324	1,530	998	1.5	-6.8

NOTE: Community hospitals include all non-Federal short-stay hospitals classified by the American Hospital Association according to one of the following services: general medical and surgical; obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; other specialty; children's general; children's eye, ear, nose, and throat; children's rehabilitation; children's orthopedic; and children's other specialty.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

Table 58. Long-stay hospitals and beds, according to type of hospital and ownership: United States, 1974 and 1979

(Data are based on reporting by facilities)

Year and type of ownership	All long-stay hospitals	Type of hospital					
		General	Psychiatric	Tuberculosis	Rehabilitation	Chronic disease	Other
1974				Number of hospitals			
All ownerships	677	37	377	47	56	66	94
Government	450	31	278	44	13	44	40
Federal	52	23	27	-	-	-	2
State-local	398	8	251	44	13	44	38
Proprietary	65	2	51	-	1	6	5
Nonprofit	162	4	48	3	42	16	49
1979							
All ownerships	560	23	354	11	50	58	64
Government	354	16	247	10	12	39	30
Federal	37	11	24	-	-	-	2
State-local	317	5	223	10	12	39	28
Proprietary	75	2	59	-	5	4	5
Nonprofit	131	5	48	1	33	15	29
1974				Number of beds			
All ownerships	369,238	20,140	289,325	8,019	7,105	20,310	24,339
Government	341,902	19,405	278,998	7,821	3,436	17,105	15,137
Federal	46,011	16,501	28,381	-	-	-	1,129
State-local	295,891	2,904	250,617	7,821	3,436	17,105	14,008
Proprietary	6,172	335	4,775	-	262	429	371
Nonprofit	21,164	400	5,552	198	3,407	2,776	8,831
1979							
All ownerships	242,521	9,406	189,352	2,080	6,115	19,045	16,523
Government	216,792	8,722	177,023	1,981	2,499	15,640	10,927
Federal	30,282	7,698	21,696	-	-	-	888
State-local	186,510	1,024	155,327	1,981	2,499	15,640	10,039
Proprietary	7,698	148	6,031	-	658	449	412
Nonprofit	18,031	536	6,298	99	2,958	2,956	5,184

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

Table 59. Nursing homes, beds, and bed rate, according to geographic division and State: United States, 1973 and 1978

(Data are based on reporting by facilities)

Geographic division and State	Nursing homes					
	Number		Beds		Bed rate[1]	
	1973	1978[2]	1973	1978[2]	1973	1978[2]
United States	21,834	18,722	1,327,704	1,348,794	62.3	56.1
New England	2,041	1,890	102,647	101,642	77.6	70.0
Maine	341	353	9,227	10,733	76.3	80.7
New Hampshire	130	96	5,873	6,583	69.9	68.6
Vermont	101	214	3,902	4,981	78.0	90.6
Massachusetts	945	829	53,858	51,175	82.6	73.1
Rhode Island	159	112	6,493	7,981	59.6	66.0
Connecticut	365	286	23,294	20,189	76.1	58.0
Middle Atlantic	2,400	2,123	193,281	221,939	47.8	50.7
New York	1,083	1,027	92,888	104,523	46.7	49.9
New Jersey	549	487	34,430	37,528	46.9	45.5
Pennsylvania	768	609	65,963	79,888	49.9	54.7
East North Central	3,790	2,755	280,059	265,880	70.8	61.8
Ohio	1,163	669	65,134	52,007	62.8	46.3
Indiana	495	476	34,247	41,010	66.8	73.1
Illinois	1,039	557	80,151	61,487	71.2	51.1
Michigan	577	563	48,567	60,238	61.7	69.4
Wisconsin	516	490	51,960	51,138	105.0	93.8
West North Central	2,755	2,521	168,168	169,003	84.8	79.3
Minnesota	589	495	44,661	44,350	105.1	96.0
Iowa	678	488	35,152	33,910	98.5	89.9
Missouri	502	824	33,644	40,588	57.7	64.7
North Dakota	107	79	6,631	5,080	94.7	65.1
South Dakota	160	138	7,795	8,647	93.9	97.2
Nebraska	251	214	17,396	16,586	92.0	82.1
Kansas	468	283	22,889	19,842	82.6	66.8
South Atlantic	2,424	2,242	135,768	150,007	41.1	37.6
Delaware	36	27	2,213	2,484	47.1	45.2
Maryland	204	183	17,755	19,322	54.5	52.2
District of Columbia	72	70	3,147	2,873	44.3	39.9
Virginia	348	330	16,732	21,008	42.0	44.9
West Virginia	137	125	4,753	6,089	23.3	27.4
North Carolina	838	722	22,145	24,614	48.6	44.7
South Carolina	123	161	8,131	9,427	38.4	36.5
Georgia	306	278	25,936	29,768	64.5	62.9
Florida	360	346	34,956	34,422	29.4	22.6
East South Central	896	782	55,734	65,420	40.7	42.4
Kentucky	312	237	18,177	17,551	51.2	45.4
Tennessee	244	245	14,827	18,461	35.8	38.6
Alabama	197	204	14,844	19,246	41.6	47.1
Mississippi	143	96	7,886	10,162	32.6	37.6

See footnotes at end of table.

Table 59. Nursing homes, beds, and bed rate, according to geographic division and State: United States, 1973 and 1978—Continued

(Data are based on reporting by facilities)

Geographic division and State	Nursing homes					
	Number		Beds		Bed rate[1]	
	1973	1978[2]	1973	1978[2]	1973	1978[2]
West South Central	1,807	1,500	144,978	140,243	72.8	61.4
Arkansas	211	179	17,952	16,561	69.6	56.7
Louisiana	212	133	17,004	13,885	51.7	37.5
Oklahoma	417	222	29,512	17,223	91.9	48.4
Texas	967	966	80,510	92,574	74.3	73.2
Mountain	732	561	43,328	45,446	55.7	46.9
Montana	105	67	4,759	4,320	67.0	53.3
Idaho	64	48	4,190	4,381	56.6	50.4
Wyoming	34	28	1,896	1,982	59.3	55.1
Colorado	214	190	16,670	19,228	83.4	82.9
New Mexico	66	43	3,345	2,640	40.8	25.4
Arizona	88	84	6,430	6,823	32.8	25.2
Utah	120	72	4,556	4,386	53.6	43.0
Nevada	41	29	1,482	1,686	39.0	30.1
Pacific	4,989	4,348	203,741	189,214	79.1	62.8
Washington	382	504	31,147	34,909	90.5	87.1
Oregon	312	184	18,306	11,663	74.7	40.9
California	4,145	3,500	150,956	138,219	78.3	61.5
Alaska	8	12	606	1,108	75.8	110.8
Hawaii	142	148	2,726	3,315	53.5	49.5

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[1] Number of beds per 1,000 population 65 years of age and over.

[2] Data for California, New York, North Carolina, and the District of Columbia are for 1976.

SOURCE: Division of Health Care Statistics, National Center for Health Statistics: Data from the National Master Facility Inventory.

Table 60. Gross national product and national health expenditures: United States, selected years 1929-80

(Data are compiled by the Health Care Financing Administration)

Year	Gross national product in billions	National health expenditures		
		Amount in billions	Percent of gross national product	Amount per capita
1929	$ 103.4	$ 3.6	3.5	$ 29.49
1935	72.2	2.9	4.0	22.65
1940	100.0	4.0	4.0	29.62
1950	286.5	12.7	4.4	81.86
1955	400.0	17.7	4.4	105.38
1960	506.5	26.9	5.3	146.30
1965	691.0	41.7	6.0	210.89
1970	992.7	74.7	7.5	357.90
1971	1,077.6	83.3	7.7	394.23
1972	1,185.9	93.5	7.9	437.77
1973	1,326.4	103.2	7.8	478.34
1974	1,434.2	116.4	8.1	534.63
1975	1,549.2	132.7	8.6	603.57
1976	1,718.0	149.7	8.7	674.14
1977	1,918.0	169.2	8.8	754.81
1978	2,156.1	189.3	8.8	835.57
1979	2,413.9	214.6	8.9	936.92
1980	2,628.8	247.2	9.4	1,067.06

SOURCE: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981.

Table 61. Personal health care expenditures, average annual percent change, and percent distribution of factors affecting growth: United States, 1965-80

(Data are compiled by the Health Care Financing Administration)

Year	Personal health care expenditures in billions	Average annual percent change[1]	Factors affecting growth			
			All factors	Prices	Population	Intensity[2]
			Percent distribution			
1965-80	...	12.8	100	58	9	33
1966	$ 39.6	10.6	100	46	11	43
1967	44.4	12.2	100	54	9	37
1968	50.2	13.1	100	43	8	49
1969	56.9	13.4	100	41	8	51
1970	65.1	14.5	100	48	8	44
1971	72.0	10.5	100	58	12	30
1972	80.2	11.5	100	40	10	50
1973	88.7	10.6	100	41	10	49
1974	101.0	13.9	100	66	7	27
1975	116.8	15.6	100	70	7	23
1976	131.8	12.9	100	69	8	23
1977	148.7	12.8	100	64	8	28
1978	166.7	12.1	100	69	9	22
1979	189.1	13.5	100	71	8	21
1980	217.9	15.2	100	75	8	17

[1] Refers to 1-year periods unless otherwise noted.

[2] Represents changes in use and/or kinds of services and supplies.

SOURCE: Health Care Financing Administration: Unpublished data.

Table 62. Consumer Price Index (1967=100) and average annual percent change for all items and selected items: United States, selected years 1950-80

(Data are based on reporting by samples of providers and other retail outlets)

Year	All items	Item					
		Medical care	Food	Apparel and upkeep	Housing	Energy	Personal care
				Consumer Price Index			
1950	72.1	53.7	74.5	79.0	72.8	---	68.3
1955	80.2	64.8	81.6	84.1	82.3	---	77.9
1960	88.7	79.1	88.0	89.6	90.2	94.2	90.1
1965	94.5	89.5	94.4	93.7	94.9	96.3	95.2
1970	116.3	120.6	114.9	116.1	118.9	107.0	113.2
1975	161.2	168.6	175.4	142.3	166.8	176.6	150.7
1976	170.5	184.7	180.8	147.6	177.2	189.3	160.5
1977	181.5	202.4	192.2	154.2	189.6	207.3	170.9
1978	195.3	219.4	211.2	159.5	202.6	220.3	182.0
1979	217.7	240.1	234.7	166.4	227.5	277.7	195.5
1980	247.0	267.2	255.3	177.4	263.2	364.8	212.7
				Average annual percent change			
1950-55	2.2	3.8	1.8	1.3	2.5	---	2.7
1955-60	2.0	4.1	1.5	1.3	1.9	---	3.0
1960-65	1.3	2.5	1.4	0.9	1.0	0.4	1.1
1965-70	4.2	6.1	4.0	4.4	4.6	2.1	3.5
1970-75	6.7	6.9	8.8	4.2	7.0	10.5	5.9
1975-76	5.8	9.5	3.1	3.7	6.2	7.2	6.5
1976-77	6.5	9.6	6.3	4.5	7.0	9.5	6.5
1977-78	7.6	8.4	9.9	3.4	6.9	6.3	6.5
1978-79	11.5	9.4	11.1	4.3	12.3	26.1	7.4
1979-80	13.5	11.3	8.8	6.6	15.7	31.4	8.8

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor: Consumer Price Index. Various releases.

Table 63. Consumer Price Index (1967=100) for all items and medical care components: United States, selected years 1950-80

(Data are based on reporting by samples of providers and other retail outlets)

Item and medical care component	Year							
	1950	1955	1960	1965	1970	1975	1979	1980
	Consumer Price Index							
CPI, all items	72.1	80.2	88.7	94.5	116.3	161.2	217.7	247.0
Less medical care	---	---	89.4	94.9	116.1	160.9	216.2	245.6
CPI, all services	58.7	70.9	83.5	92.2	121.6	166.6	234.4	270.9
All medical care	53.7	64.8	79.1	89.5	120.6	168.6	240.1	267.2
Medical care services	49.2	60.4	74.9	87.3	124.2	179.1	258.5	288.9
Professional services	---	---	---	---	119.7	164.5	228.5	255.0
Physician services	55.2	65.4	77.0	88.3	121.4	169.4	245.5	274.3
Dental services	63.9	73.0	82.1	92.2	119.4	161.9	217.0	242.3
Other professional services[1]	---	---	---	---	---	---	110.5	122.3
Other medical care services	---	---	---	---	129.7	196.9	295.2	330.4
Hospital and other medical services[1]	---	---	---	---	---	---	116.9	132.7
Hospital room	30.3	42.3	57.3	75.9	145.4	236.1	368.2	416.3
Other hospital and medical care services[1]	---	---	---	---	---	---	115.9	132.1
Medical care commodities	88.5	94.7	104.5	100.2	103.6	118.8	154.7	168.7
Prescription drugs	92.6	101.6	115.3	102.0	101.2	109.3	142.6	155.8
Nonprescription drugs and medical supplies[1]	---	---	---	---	---	---	111.3	121.3
Eyeglasses[1]	---	---	---	---	---	---	108.0	116.9
Internal and respiratory over-the-counter drugs	---	---	---	98.0	106.2	130.1	172.2	188.8
Nonprescription medical equipment and supplies[1]	---	---	---	---	---	---	110.2	118.9

[1] Dec. 1977=100.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor: Consumer Price Index. Various releases.

Table 64. Consumer Price Index (1967=100) average annual percent change for all items and medical care components: United States, selected years 1950-80

(Data are based on reporting by samples of providers and other retail outlets)

Item and medical care component	Period						
	1950-55	1955-60	1960-65	1965-70	1970-75	1975-79	1979-80
	Average annual percent change						
CPI, all items	2.2	2.0	1.3	4.2	6.7	7.8	13.5
Less medical care	---	---	1.2	4.1	6.7	7.7	13.6
CPI, all services	3.8	3.3	2.0	5.7	6.5	8.9	15.6
All medical care	3.8	4.1	2.5	6.1	6.9	9.2	11.3
Medical care services	4.2	4.4	3.1	7.3	7.6	9.6	11.8
Professional services	---	---	---	---	6.6	8.6	11.6
Physician services	3.4	3.3	2.8	6.6	6.9	9.7	11.7
Dental services	2.7	2.4	2.3	5.3	6.3	7.6	11.7
Other professional services[1]	---	---	---	---	---	---	10.7
Other medical care services	---	---	---	---	8.7	10.7	11.9
Hospital and other medical services[1]	---	---	---	---	---	---	13.5
Hospital room	6.9	6.3	5.8	13.9	10.2	11.7	13.1
Other hospital and medical care services[1]	---	---	---	---	---	---	14.0
Medical care commodities	1.4	2.0	-0.8	0.7	2.8	6.8	9.0
Prescription drugs	1.9	2.6	-2.4	-0.2	1.6	6.9	9.3
Nonprescription drugs and medical supplies[1]	---	---	---	---	---	---	9.0
Eyeglasses[1]	---	---	---	---	---	---	8.2
Internal and respiratory over-the-counter drugs	---	---	---	1.6	4.1	7.3	9.6
Nonprescription medical equipment and supplies[1]	---	---	---	---	---	---	7.9

[1] Dec. 1977=100.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor: Consumer Price Index. Various releases.

Table 65. National health expenditures, according to source of funds: United States, selected years 1929-80

(Data are compiled by the Health Care Financing Administration)

Year	All health expenditures in billions	Source of funds					
		Private			Public		
		Amount in billions	Amount per capita	Percent of total	Amount in billions	Amount per capita	Percent of total
1929	$ 3.6	$ 3.2	$ 25.49	86.4	$ 0.5	$ 4.00	13.6
1935	2.9	2.4	18.30	80.8	0.6	4.34	19.2
1940	4.0	3.2	23.61	79.7	0.8	6.03	20.3
1950	12.7	9.2	59.62	72.8	3.4	22.24	27.2
1955	17.7	13.2	78.33	74.3	4.6	27.05	25.7
1960	26.9	20.3	110.20	75.3	6.6	36.10	24.7
1965	41.7	30.9	156.32	74.1	10.8	54.57	25.9
1970	74.7	46.9	224.68	62.8	27.8	133.22	37.2
1971	83.3	51.6	244.36	62.0	31.7	149.87	38.0
1972	93.5	58.1	271.89	62.1	35.4	165.88	37.9
1973	103.2	63.9	296.19	61.9	39.3	182.15	38.1
1974	116.4	69.3	318.18	59.5	47.1	216.44	40.5
1975	132.7	76.5	348.08	57.7	56.2	255.49	42.3
1976	149.7	86.7	390.63	57.9	62.9	283.51	42.1
1977	169.2	99.1	442.14	58.6	70.1	312.67	41.4
1978	189.3	110.0	485.29	58.1	79.4	350.27	41.9
1979	214.6	124.5	543.61	58.0	90.1	393.31	42.0
1980	247.2	143.0	617.10	57.8	104.2	449.96	42.2

SOURCE: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981.

Table 66. National health expenditures average annual percent change, according to source of funds: United States, selected years 1929-80

(Data are compiled by the Health Care Financing Administration)

Period	All health expenditures	Source of funds	
		Private	Public
	Average annual percent change		
1929-80	8.6	7.7	11.0
1929-35	-3.5	-4.7	3.1
1935-40	6.6	5.9	5.9
1940-50	12.2	11.1	15.6
1950-55	6.9	7.5	6.2
1955-60	8.7	9.0	7.5
1960-65	9.2	8.8	10.4
1965-70	12.4	8.7	20.8
1970-75	12.2	10.3	15.1
1975-80	13.2	13.3	13.1
1970-71	11.5	10.0	14.0
1971-72	12.2	12.6	11.7
1972-73	10.4	10.0	11.0
1973-74	12.8	8.5	19.8
1974-75	14.0	10.4	19.3
1975-76	12.8	13.3	11.9
1976-77	13.0	14.3	11.4
1977-78	11.9	11.0	13.3
1978-79	13.4	13.2	13.5
1979-80	15.2	14.9	15.6

SOURCE: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981.

Table 67. Personal health care expenditures and percent distribution, according to source of payment: United States, selected years 1929-80

(Data are compiled by the Health Care Financing Administration)

Year	All personal health care expenditures in billions[1]	Source of payment							
		All sources	Direct payment	Third-party payment					
				Total	Private health insurance	Philanthropy and industry	Government		
							Total	Federal	State and local
		Percent distribution							
1929	$ 3.2	100.0	[2]88.4	11.6	---	2.6	9.0	2.7	6.3
1935	2.7	100.0	[2]82.4	17.6	---	2.8	14.7	3.4	11.3
1940	3.5	100.0	[2]81.3	18.7	---	2.6	16.1	4.1	12.0
1950	10.9	100.0	65.5	34.5	9.1	2.9	22.4	10.4	12.0
1955	15.7	100.0	58.1	41.9	16.1	2.8	23.0	10.5	12.5
1960	23.7	100.0	54.9	45.1	21.1	2.3	21.8	9.3	12.5
1965	35.8	100.0	51.7	48.3	24.5	2.2	21.6	10.1	11.4
1970	65.1	100.0	39.9	60.1	24.0	1.6	34.5	22.3	12.2
1971	72.0	100.0	38.6	61.4	24.1	1.7	35.6	23.3	12.3
1972	80.2	100.0	38.6	61.4	23.8	1.6	36.0	23.6	12.4
1973	88.7	100.0	38.6	61.4	23.8	1.5	36.1	23.8	12.4
1974	101.0	100.0	36.1	63.9	24.2	1.5	38.2	25.5	12.7
1975	116.8	100.0	33.4	66.6	25.8	1.4	39.5	26.9	12.6
1976	131.8	100.0	32.6	67.4	26.9	1.4	39.1	27.4	11.7
1977	148.7	100.0	32.8	67.2	26.9	1.4	38.9	27.6	11.4
1978	166.7	100.0	32.5	67.5	27.0	1.3	39.1	27.8	11.3
1979	189.1	100.0	32.8	67.2	26.5	1.3	39.3	28.1	11.3
1980	217.9	100.0	32.4	67.6	26.6	1.3	39.6	28.7	11.0

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[1] Includes all expenditures for health services and supplies other than expenses for prepayment and administration, and government public health activities.

[2] Includes any insurance benefits and expenses for prepayment (insurance premiums less insurance benefits).

SOURCE: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981.

Table 68. National health expenditures and percent distribution, according to type of expenditure: United States, selected years 1950-80

(Data are compiled by the Health Care Financing Administration)

Type of expenditure	Year						
	1950	1960	1965	1970	1975	1979	1980
				Amount in billions			
Total	$12.7	$26.9	$41.7	$74.7	$132.7	$214.6	$247.2
				Percent distribution			
All expenditures	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Health services and supplies	92.4	93.6	91.6	92.8	93.7	95.2	95.3
Hospital care	30.4	33.8	33.3	37.2	39.3	39.9	40.3
Physician services	21.7	21.1	20.3	19.2	18.8	19.0	18.9
Dentist services	7.6	7.4	6.7	6.4	6.2	6.3	6.4
Nursing home care	1.5	2.0	5.0	6.3	7.6	8.3	8.4
Other professional services	3.1	3.2	2.5	2.1	2.0	2.2	2.2
Drugs and drug sundries	13.6	13.6	12.4	10.7	9.0	8.0	7.8
Eyeglasses and appliances	3.9	2.9	2.8	2.6	2.4	2.2	2.1
Expenses for prepayment	3.6	4.1	3.9	3.6	3.3	4.1	4.2
Government public health activities	2.9	1.5	2.0	1.9	2.4	3.0	3.0
Other health services	4.2	4.1	2.7	2.8	2.8	2.3	2.2
Research and construction	7.6	6.4	8.4	7.2	6.3	4.8	4.7
Research	0.9	2.5	3.6	2.6	2.5	2.2	2.2
Construction	6.7	3.9	4.8	4.6	3.8	2.5	2.5

SOURCE: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981.

Table 69. National health expenditures average annual percent change, according to type of expenditure: United States, selected years 1950-80

(Data are compiled by the Health Care Financing Administration)

Type of expenditure	Period					
	1950-80	1950-60	1960-65	1965-70	1970-75	1975-80
	Average annual percent change					
All expenditures	10.4	7.8	9.2	12.4	12.2	13.2
Health services and supplies	10.5	8.0	8.7	12.7	12.4	13.6
Hospital care	11.4	9.0	8.8	14.9	13.4	13.8
Physician services	10.0	7.5	8.3	11.0	11.7	13.4
Dentist services	9.7	7.5	7.0	10.9	11.8	14.2
Nursing home care	16.7	10.9	33.2	17.5	16.5	15.4
Other professional services	9.1	8.1	2.1	9.9	10.2	15.7
Drugs and drug sundries	8.4	7.8	7.0	9.0	8.3	10.0
Eyeglasses and appliances	6.0	4.7	8.4	9.6	11.0	9.8
Expenses for prepayment	10.6	9.1	7.8	11.0	10.3	18.8
Government public health activities	10.2	1.4	14.9	11.8	18.0	17.9
Other health services	8.3	7.7	-	13.8	12.4	7.9
Research and construction	8.5	5.9	15.5	9.1	9.2	6.7
Research	14.2	18.9	16.5	5.9	10.5	10.4
Construction	7.0	2.2	14.9	11.2	8.4	3.6

SOURCE: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981.

Table 70. Hospital expenses per inpatient day, personnel and number per 100 patients, and average annual percent change: United States, 1971-79

(Data are based on reporting by a census of hospitals)

Year and period	Adjusted expenses per inpatient day[1] Total	Labor[2]	Non-labor	Labor costs as percent of total	Personnel[3] Number in thousands	Number per 100 patients
1971	83.43	53.10	30.33	63.6	1,999	272
1972	94.61	59.24	35.37	62.6	2,056	278
1973	101.78	62.86	38.92	61.8	2,149	280
1974	113.21	68.76	44.45	60.7	2,289	289
1975	133.08	79.00	54.08	59.4	2,399	298
1976	152.24	88.08	64.16	57.9	2,483	304
1977	173.25	99.63	73.62	57.5	2,581	315
1978	193.81	110.82	82.99	57.2	2,662	323
1979	215.75	122.95	92.80	57.0	2,762	328
			Average annual percent change			
1971-79	12.6	11.1	15.0	...	4.1	2.4
1971-72	13.4	11.6	16.6	...	2.9	2.2
1972-73	7.6	6.1	10.0	...	4.5	0.7
1973-74	11.2	9.4	14.2	...	6.5	3.2
1974-75	17.6	14.9	21.7	...	4.8	3.1
1975-76	14.4	11.5	18.6	...	3.5	2.0
1976-77	13.8	13.1	14.7	...	3.9	3.6
1977-78	11.9	11.2	12.7	...	3.1	2.5
1978-79	11.3	10.9	11.8	...	3.8	1.5

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[1] Refers exclusively to expenses incurred for inpatient care.
[2] Labor expenses include employee benefits.
[3] Full-time equivalent personnel.

NOTE: Data refer to non-Federal short-term general and other specialty hospitals.

SOURCE: American Hospital Association: Hospital Statistics, 1980 Edition. Chicago, 1980. (Copyright 1980: Used with the permission of the American Hospital Association.)

Table 71. Average annual percent increases in hospital inpatient expenses per patient day, according to contributing factors: United States, selected years 1960-79

(Data are based on a number of government and private sources)

Contributing factor	Period					
	1960-65[1]	1965-68	1968-71	1971-74	1974-76	1976-79
	Average annual percent increase					
Total	6.7	11.2	14.3	10.7	16.0	12.3
	Percent of total increase					
Wage rates	43	35	41	36	36	35
Prices of hospital purchases	7	12	15	28	22	34
Hospital employees	16	18	13	11	9	11
Other expenses[2]	34	35	31	25	33	20

[1] Statistics calculated on a per patient day basis; statistics for all other periods are calculated on a per adjusted patient day basis. The latter includes an approximation of equivalent services to outpatients.

[2] Nonlabor expenses such as X-rays, laboratory tests, etc.

NOTE: For 1971-79, employee benefits are included as part of the wage component of total hospital expenses. Previously, they were included in the service component. As these benefits amount to a sizable portion of total hospital expenses (7.6 percent in 1979), this impacts on the distribution among contributing factors to hospital expenses.

SOURCES: American Hospital Association: Hospital Statistics, 1980 Edition. Chicago, 1980; Bureau of Labor Statistics, U.S. Department of Labor: Consumer Price Index. Various releases.

Table 72. Nursing home average monthly charges and percent distribution of residents, according to primary source of payments and selected facility characteristics: United States, 1973-74 and 1977

(Data are based on a sample of nursing homes)

Facility characteristic	1973-74[1]						1977					
	All residents	Primary source of payment					All residents	Primary source of payment				
		Own income	Medicare	Medicaid	Public assis-tance welfare	All other sources		Own income	Medicare	Medicaid	Public assis-tance welfare	All other sources
	Average monthly charge[2]											
All facilities	$479	$491	$754	$503	$381	$225	$689	$690	$1,167	$720	$508	$440
Ownership												
Proprietary	489	525	754	486	373	406	670	686	1,048	677	501	562
Nonprofit and government	456	427	*751	556	397	136	732	698	1,325	825	534	324
Certification[3]												
Skilled nursing facility	566	585	765	567	468	290	880	866	1,136	955	575	606
Skilled nursing and intermediate facility	514	521	719	513	482	396	762	800	1,195	739	623	630
Intermediate facility	376	388	...	375	333	*389	556	567	...	563	479	*456
Not certified	329	377	...	...	330	*89	390	447	...	...	401	*155
Bed size												
Less than 50 beds	397	429	*625	431	296	*128	546	516	*869	663	394	*295
50-99 beds	448	484	*786	449	356	186	643	686	*1,141	634	493	468
100-199 beds	502	523	787	508	414	256	706	721	1,242	691	573	551
200 beds or more	576	506	*689	656	496	307	837	823	*1,179	925	602	370
Geographic region												
Northeast	651	637	*957	718	538	131	918	909	1,369	975	*511	395
North Central	433	449	*738	454	360	252	640	652	*1,160	639	537	524
South	410	452	*615	408	306	278	585	585	*1,096	619	452	342
West	454	487	*672	442	323	*314	653	663	*868	663	564	*499

See footnotes at end of table.

Table 72. Nursing home average monthly charges and percent distribution of residents, according to primary source of payments and selected facility characteristics: United States, 1973-74 and 1977—Continued

(Data are based on a sample of nursing homes)

Facility characteristic	1973-74[1]						1977					
	All residents	Primary source of payment					All residents	Primary source of payment				
		Own income	Medicare	Medicaid	Public assistance welfare	All other sources		Own income	Medicare	Medicaid	Public assistance welfare	All other sources
	Percent distribution of residents											
All facilities	100.0	36.7	1.1	47.9	11.4	3.0	100	38.4	2.0	47.8	6.4	5.3
Ownership												
Proprietary	100.0	34.5	1.2	52.0	11.0	1.4	100	37.5	1.7	49.6	7.3	3.8
Nonprofit and government	100.0	41.9	0.9	38.4	12.2	6.6	100	40.4	2.7	43.8	4.4	8.6
Certification[3]												
Skilled nursing facility	100.0	36.9	2.0	53.6	5.3	2.2	100	41.5	4.6	41.4	7.7	4.8
Skilled nursing and intermediate facility	100.0	29.8	1.1	59.7	7.6	1.8	100	31.6	2.6	58.3	3.2	4.1
Intermediate facility	100.0	35.8	...	53.1	9.7	1.4	100	36.3	...	55.3	5.3	3.1
Not certified	100.0	50.6	...	...	39.3	10.2	100	64.2	...	...	19.0	16.7
Bed size												
Less than 50 beds	100.0	41.5	*0.6	37.1	17.5	3.4	100	49.6	*1.8	32.7	10.5	5.4
50-99 beds	100.0	37.8	0.9	47.9	10.9	2.5	100	39.5	*1.2	46.5	8.1	4.7
100-199 beds	100.0	36.3	1.3	50.8	8.8	2.8	100	38.4	2.6	50.4	4.6	4.0
200 beds or more	100.0	30.7	*1.3	51.6	12.3	4.1	100	28.6	2.3	55.5	4.6	9.1
Geographic region												
Northeast	100.0	30.6	1.4	53.2	10.5	4.5	100	34.6	3.3	53.3	3.8	5.1
North Central	100.0	44.4	0.8	35.6	16.1	3.0	100	44.5	1.5	42.1	6.5	5.4
South	100.0	31.0	1.1	55.2	10.3	2.4	100	32.2	*1.4	52.5	8.2	5.7
West	100.0	37.9	*1.2	54.6	4.6	1.9	100	41.3	2.5	44.7	6.7	4.8

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[1] Excludes residents in personal care or domiciliary care homes. Excludes residents who did not live in the nursing home for at least one month.

[2] Includes life-care residents and no-charge residents.

[3] Medicare extended care facilities and Medicaid skilled nursing homes from the 1973-74 survey were considered to be equivalent to Medicare or Medicaid skilled nursing facilities in 1977 for the purposes of this comparison.

SOURCES: National Center for Health Statistics: Charges for care and sources of payment for residents in nursing homes, United States, National Nursing Home Survey, August 1973-April 1974, by E. Hing. Vital and Health Statistics. Series 13-No. 32. DHEW Pub. No. (PHS) 78-1783. Public Health Service. Washington. U.S. Government Printing Office, Nov. 1977; The National Nursing Home Survey, 1977 summary for the United States, by J. F. VanNostrand, A. Zappolo, and E. Hing, et al. Vital and Health Statistics. Series 13-No. 43. DHEW Pub. No. (PHS) 79-1794. Public Health Service. Washington. U.S. Government Printing Office, July 1979.

Table 73. Monthly charge for care in nursing homes and percent distribution of residents, according to selected facility and resident characteristics: United States, 1964, 1973-74, and 1977

(Data are based on reporting by a sample of nursing homes)

Facility and resident characteristic	Year					
	1964		1973-74[2]		1977	
	Average total monthly charge[1]	Percent distribution of residents	Average total monthly charge[1]	Percent distribution of residents	Average total monthly charge[1]	Percent distribution of residents
FACILITY CHARACTERISTIC						
All facilities	$186	100.0	$479	100.0	$689	100.0
Type of service provided						
Nursing care	212	67.4	495	64.8	719	85.4
Personal care with or without nursing	117	32.6	448	35.2	514	14.6
Ownership						
Proprietary	205	60.2	489	69.8	670	68.2
Nonprofit and government	145	39.8	456	30.2	732	31.8
Size						
Less than 50 beds	---	---	397	15.2	546	12.9
50-99 beds	---	---	448	34.1	643	30.5
100-199 beds	---	---	502	35.6	706	38.8
200 beds or more	---	---	576	15.1	837	17.9
Geographic region						
Northeast	213	28.6	651	22.0	918	22.4
North Central	171	36.6	433	34.6	640	34.5
South	161	18.1	410	26.0	585	27.2
West	204	16.7	454	17.4	653	15.9
RESIDENT CHARACTERISTIC						
All residents	186	100.0	479	100.0	689	100.0
Age						
Under 65 years	155	12.0	434	10.6	585	13.6
65-74 years	184	18.9	473	15.0	669	16.2
75-84 years	191	41.7	488	35.5	710	35.7
85 years and over	194	27.5	485	38.8	719	34.5
Sex						
Male	171	35.0	466	29.1	652	28.8
Female	194	65.0	484	70.9	705	71.2
Level of care received						
Intensive nursing care	224	31.0	510	40.6	758	43.8
Other nursing care	199	28.7	469	42.1	659	40.7
Personal care	164	26.9	435	16.4	586	14.4
No nursing or personal care	109	13.5	315	0.9	388	1.1

[1] Includes life-care residents and no-charge residents.

[2] Data exclude residents of personal care homes.

SOURCE: National Center for Health Statistics: Charges for care and sources for payment for residents in nursing homes, United States, National Nursing Home Suvey, Aug. 1973-Apr. 1974, by E. Hing. Vital and Health Statistics. Series 13-No. 32. DHEW Pub. No. (PHS) 78-1783. Public Health Service. Washington. U.S. Government Printing Office. Nov. 1977; Unpublished data from 1977 National Nursing Home Survey.

Table 74. Personal health care per capita expenditures, according to age, source of payment, and type of expenditure: United States, selected years 1965–78

(Data are compiled by the Health Care Financing Administration)

Year and type of expenditure	All ages			Under 19 years			19–64 years			65 years and over		
	Per capita amount	Source of payment		Per capita amount	Source of payment		Per capita amount	Source of payment		Per capita amount	Source of payment	
		Private	Public		Private	Public		Private	Public		Private	Public
1965		Percent of total			Percent of total			Percent of total			Percent of total	
All expenditures	$188.43	78.9	21.1	$ 83.02	84.5	15.5	$215.58	80.8	19.2	$ 472.31	70.1	29.9
Hospital care	70.46	61.3	38.7	22.51	64.2	35.8	87.24	64.6	35.4	175.52	50.9	49.1
Physician services	42.85	93.1	6.9	22.27	97.7	2.3	49.21	91.6	8.4	92.50	93.1	6.9
Dentist services	14.20	98.3	1.7	10.04	97.5	2.5	17.85	99.0	1.0	11.30	94.4	5.6
Other professional services	5.22	96.4	3.6	1.76	95.5	4.5	6.41	96.4	3.6	12.99	96.7	3.3
Drugs and drug sundries	29.18	96.6	3.4	18.17	98.9	1.1	31.60	98.0	2.0	61.14	89.7	10.3
Eyeglasses and appliances	9.44	98.3	1.6	3.98	98.7	1.3	12.78	98.2	1.8	13.63	99.2	0.8
Nursing home care	10.48	65.6	34.4	---	---	---	2.42	70.0	30.0	97.19	65.0	35.0
Other health services	6.60	32.9	67.1	4.29	12.4	87.6	8.07	45.5	54.5	7.99	8.6	91.4
1970												
All expenditures	315.37	65.9	34.1	137.68	76.1	23.9	337.27	75.4	24.6	853.81	38.8	61.2
Hospital care	133.39	47.6	52.4	45.72	58.2	41.8	153.21	60.2	39.8	348.74	11.4	88.6
Physician services	68.81	78.5	21.5	36.39	89.6	10.4	75.90	89.0	11.0	149.80	38.5	61.5
Dentist services	22.80	95.3	4.7	15.80	93.5	6.5	27.88	96.2	3.8	20.42	93.5	6.5
Other professional services	7.70	86.1	13.9	2.43	78.6	21.4	9.05	92.6	7.4	19.23	73.3	26.7
Drugs and drug sundries	40.34	94.2	5.8	25.03	96.4	3.6	42.42	95.6	4.4	85.63	88.0	12.0
Eyeglasses and appliances	10.07	94.9	5.1	4.11	96.1	3.9	13.16	96.9	3.1	15.03	83.9	16.1
Nursing home care	22.44	51.2	48.8	.81	---	100.0	4.18	29.7	70.3	204.87	54.4	45.6
Other health services	9.90	28.8	71.2	7.39	10.3	89.7	11.48	39.9	60.1	10.09	8.9	91.2
1976												
All expenditures	602.45	60.9	39.1	232.34	71.1	28.9	624.31	71.1	28.9	1,623.88	35.5	64.5
Hospital care	272.69	45.2	54.8	83.92	54.4	45.6	300.75	58.5	41.5	702.80	11.2	88.8
Physician services	126.11	74.5	25.5	59.55	82.9	17.1	135.52	84.7	15.3	280.39	42.2	57.8
Dentist services	46.19	95.2	4.8	30.94	90.4	9.6	55.40	96.7	3.3	43.66	95.5	4.5
Other professional services	14.60	79.5	20.5	4.40	63.1	36.9	16.66	89.7	10.3	34.91	59.9	40.1
Drugs and drug sundries	58.40	91.1	8.9	34.62	93.6	6.4	61.10	93.0	7.0	111.07	83.3	16.7
Eyeglasses and appliances	14.60	91.9	8.1	5.83	95.4	4.6	18.40	95.5	4.5	21.12	72.9	27.3
Nursing home care	52.22	44.6	55.4	.77	---	100.0	16.04	20.6	79.4	404.96	50.0	50.0
Other health services	17.64	25.7	74.3	12.32	10.7	89.3	20.43	34.1	65.9	18.97	6.9	93.1

Table 74. Personal health care per capita expenditures, according to age, source of payment, and type of expenditure: United States, selected years 1965-78—Continued

(Data are compiled by the Health Care Financing Administration)

Year and type of expenditure	All ages			Under 19 years			19-64 years			65 years and over		
	Per capita amount	Source of payment		Per capita amount	Source of payment		Per capita amount	Source of payment		Per capita amount	Source of payment	
		Pri-vate	Public		Pri-vate	Public		Pri-vate	Public		Pri-vate	Public
1977		Percent of total			Percent of total			Percent of total			Percent of total	
All expenditures	$674.46	61.0	39.0	$258.77	71.5	28.5	$690.76	71.2	28.8	$1,821.14	36.1	63.9
Hospital care	307.13	45.6	54.4	92.84	54.6	45.4	334.95	59.2	40.8	794.72	12.0	88.0
Physician services	141.29	74.1	25.9	67.61	84.4	15.6	148.66	84.5	15.5	320.59	41.8	58.2
Dentist services	52.69	95.7	4.3	35.33	91.4	8.6	62.85	96.9	3.1	49.96	96.1	3.9
Other professional services	16.73	77.3	22.7	4.98	48.9	51.1	18.99	88.5	11.5	39.53	59.0	41.0
Drugs and drug sundries	62.45	91.3	8.7	37.19	94.2	5.8	65.02	93.0	7.0	123.69	84.2	15.8
Eyeglasses and appliances	15.62	91.4	8.6	6.22	95.2	4.8	19.57	95.4	4.6	22.50	69.9	30.1
Nursing home care	60.44	45.5	54.5	.86	3.3	96.7	19.36	20.2	79.8	456.18	51.5	48.5
Other health services	18.11	27.1	72.9	13.72	10.6	89.4	21.36	35.1	64.9	13.96	10.0	90.0
1978												
All expenditures	752.98	61.3	38.7	286.07	71.3	28.7	763.96	71.4	28.6	2,026.19	36.9	63.2
Hospital care	340.93	46.2	53.8	101.76	54.2	45.8	369.98	59.9	40.1	868.86	12.5	87.5
Physician services	158.08	73.2	26.8	75.06	84.0	16.0	163.56	84.3	15.7	365.70	40.6	59.4
Dentist services	59.64	95.9	4.1	40.01	91.6	8.4	70.75	97.1	2.9	56.76	96.7	3.3
Other professional services	19.17	77.3	22.7	5.73	48.5	51.5	21.58	89.0	11.0	44.74	57.9	42.1
Drugs and drug sundries	67.70	91.4	8.6	40.63	93.9	6.1	70.02	93.1	6.9	132.61	84.4	15.6
Eyeglasses and appliances	17.40	90.8	9.2	6.92	95.4	4.6	21.62	95.2	4.8	24.83	66.9	33.2
Nursing home care	70.64	46.9	53.1	1.00	1.5	98.5	23.67	19.6	80.4	518.14	53.8	46.2
Other health services	19.43	27.1	72.9	14.97	10.9	89.1	22.77	35.0	65.0	14.53	9.9	90.1

SOURCE: Office of Research, Demonstrations, and Statistics: Age differences in health care spending, 1978, by C. R. Fisher. Health Care Financing Review. HCFA Pub. No. 03045. Health Care Financing Administration. Washington. U.S. Government Printing Office, Spring 1980.

Table 75. Medicare expenditures and percent distribution, according to type of service: United States, selected years 1967-80

(Data are compiled by the Health Care Financing Administration)

Type of service	Year					
	1967	1970	1975	1978	1979	1980[1]
	Amount in billions					
Total	$ 4.5	$ 7.1	$ 15.6	$ 24.9	$ 29.3	$ 35.6
	Percent distribution					
All services	100.0	100.0	100.0	100.0	100.0	100.0
Hospital care	69.0	71.8	74.8	73.9	73.1	73.9
Physician services	24.7	22.5	21.3	21.7	22.1	21.6
Nursing home care	4.6	4.2	1.9	1.2	1.4	1.1
Other services[2]	1.7	1.4	1.9	3.2	3.4	3.4

[1] Preliminary estimates.

[2] Other services include home health agencies, home health services, eyeglasses and appliances, and other professional services.

SOURCES: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981; Unpublished data.

Table 76. Medicaid expenditures[1] and percent distribution, according to type of service: United States, selected years 1967-80

(Data are compiled from State and Federal Government sources)

Type of service	Year					
	1967	1970	1975	1978	1979	1980[2]
	Amount in billions					
Total	$ 2.9	$ 5.2	$ 13.5	$ 18.8	$ 21.7	$ 25.3
	Percent distribution					
All services	100.0	100.0	100.0	100.0	100.0	100.0
Hospital care	42.3	42.9	34.6	37.2	37.2	37.7
Physician services	10.9	13.3	14.0	10.6	9.8	9.1
Dentist services	4.4	3.2	2.9	2.1	1.9	2.0
Other professional services	0.9	1.4	1.5	2.1	1.9	2.0
Drugs and drug sundries	7.2	7.9	6.6	5.9	5.6	5.2
Nursing home care	31.7	27.2	36.0	38.8	40.5	40.9
Other health services[3]	2.6	4.1	4.4	3.2	3.3	3.2

[1] Expenditures from Federal, State, and local funds under Medicaid. Includes per capita payments for Part B of Medicare and excludes administrative costs.

[2] Preliminary estimates.

[3] Other services include laboratory and radiological services, home health, and family planning services.

SOURCES: Office of Research, Demonstrations, and Statistics: National health expenditures, 1980, by R. M. Gibson and D. R. Waldo. Health Care Financing Review. HCFA Pub. No. 03123. Health Care Financing Administration. Washington. U.S. Government Printing Office, Sept. 1981; Unpublished data.

Table 77. Veterans' medical care expenditures[1] and percent distribution, according to type of expenditure: United States, selected fiscal years 1965-80

(Data are compiled from Veterans Administration sources)

Type of expenditure	Year							
	1965	1970	1975	1976	1977[2]	1978[2]	1979[2]	1980[2]
	Amount in millions							
Total	$1,150.1	$1,688.6	$3,328.2	$3,838.8	$4,376.3	$4,809.3	$5,159.5	$5,981.3
	Percent distribution							
All expenditures	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Inpatient hospital	81.9	71.3	66.4	65.6	64.8	64.3	64.4	64.3
Outpatient care	12.0	14.0	17.8	18.5	18.8	18.9	18.5	19.1
VA nursing homes and domiciliaries	2.9	4.3	4.8	4.8	4.8	5.1	5.1	5.1
Community nursing homes	0.0	1.2	1.4	1.5	1.7	1.8	1.9	2.0
All others[3]	3.2	9.1	9.6	9.7	9.8	10.0	10.1	9.6

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[1] Medical care expenditures exclude construction, medical administration, and miscellaneous operating expenses.

[2] Data for fiscal year ending September 30; all other data for fiscal year ending June 30.

[3] Includes miscellaneous benefits and services, contract hospitals, education and training for 1969-79, subsidies to State veterans' hospitals, nursing homes, and domiciliaries, and the Civilian Health and Medical Program of the Veterans Administration.

SOURCE: Veterans Administration: Unpublished data from the Budget Office.

Table 78. National funding for health research and development and average annual percent change, according to source of funds: United States, selected years 1960-80

(Data are based on multiple sources)

Year and period	All funding	Source of funds			
		Government			
		Federal	State and local[1]	Industry[2]	Private nonprofit organizations
		Amount in millions			
1960	$ 884	$ 448	$ 44	$ 253	$139
1969	2,785	1,674	144	754	213
1970	2,846	1,667	169	795	215
1971	3,167	1,877	197	860	233
1972	3,527	2,147	228	925	227
1973	3,735	2,225	245	1,033	232
1974	4,431	2,754	254	1,171	252
1975[1]	4,688	2,832	286	1,306	264
1976[1]	5,084	3,059	312	1,446	267
1977[1]	5,594	3,396	338	1,587	273
1978[1]	6,249	3,811	386	1,770	282
1979[1]	7,093	4,321	415	2,055	302
1980[3]	7,891	4,723	455	2,391	322
		Average annual percent change			
1960-80	11.6	12.5	12.4	11.9	4.3
1960-69	13.6	15.8	14.1	12.9	4.9
1969-79	9.8	9.9	11.2	10.5	3.5
1970-71	11.3	12.6	16.6	8.2	8.4
1971-72	11.4	14.4	15.7	7.6	-2.6
1972-73	5.9	3.6	7.5	11.7	2.2
1973-74	18.6	23.8	3.7	13.4	8.6
1974-75	5.8	2.8	12.6	11.5	4.8
1975-76	8.5	8.0	9.1	10.7	1.1
1976-77	10.0	11.2	8.3	9.8	2.3
1977-78	11.7	12.2	14.2	11.5	3.3
1978-79	13.5	13.4	7.5	16.1	7.1
1979-80	11.3	9.3	9.6	16.4	6.6

[1] Revised figures.

[2] Includes expenditures for drug research. These expenditures are included in the "drugs and sundries" component of the Health Care Financing Administration's National Health Expenditure Series, not under "research."

[3] Estimates.

SOURCE: Office of Program Planning and Evaluation, National Institutes of Health, Public Health Service: Selected data.

Table 79. Federal obligations for health research and development and percent distribution, according to agency: United States, fiscal years 1970-80

(Data are compiled from Federal Government sources)

Agency	1970	1971	1972	1973	1974	1975	1976	1977[1]	1978[1]	1979[1]	1980[1]
	Amount in millions										
Total	$1,666.6	$1,876.6	$2,147.3	$2,225.3	$2,753.6	$2,831.7	$3,058.7	$3,395.9	$3,811.2	$4,321.2	$4,723.4
	Percent distribution										
All Federal agencies	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Department of Health and Human Services	70.6	70.1	73.8	72.3	76.0	77.6	77.9	78.1	79.0	79.9	78.2
National Institutes of Health	52.4	55.4	59.2	59.5	63.1	66.4	67.4	67.1	67.7	68.3	67.4
Other Public Health Service	16.2	13.2	12.8	11.5	11.4	9.8	9.4	9.1	9.6	9.7	9.7
Other Department of Health and Human Services	2.0	1.6	1.7	1.4	1.5	1.3	1.1	1.9	1.8	1.8	1.1
Other agencies	29.4	29.9	26.2	27.7	24.0	22.4	22.1	21.9	21.0	20.2	21.8
Department of Agriculture	3.0	3.2	3.1	2.7	2.2	2.2	2.0	2.5	2.5	2.6	3.1
Department of Defense	7.5	6.6	5.9	5.7	4.3	4.1	3.9	4.4	4.3	4.3	4.5
Department of Education[2]	...	...	...	...	...	...	...	...	...	...	0.7
Department of Energy[3]	...	...	...	...	...	...	...	...	5.1	4.4	4.5
Department of the Interior	0.7	1.2	1.6	1.5	1.2	0.3	0.4	0.3	0.4	0.5	0.5
Department of Transportation	0.6	2.2	1.8	2.9	2.4	0.4	0.2	0.2	0.2	0.1	0.1
Agency for International Development	0.6	0.8	0.7	0.7	0.4	0.2	0.3	0.7	0.5	0.5	0.3
Atomic Energy Commission[3]	6.3	5.6	4.8	5.0	...	...	...	...	...	...	...
Consumer Product Safety Commission	...	...	...	...	0.2	0.3	0.2	0.2	0.1	0.1	0.1
Energy Research and Development Administration[3]	...	...	...	...	4.4	5.8	5.5	5.3	...	...	...
Environmental Protection Agency	...	0.7	0.7	0.9	0.7	1.3	2.1	1.7	1.5	1.6	1.7
National Aeronautics and Space Administration	5.2	4.0	2.3	1.9	2.9	2.6	2.4	1.4	1.5	1.0	1.5
National Science Foundation	1.7	1.8	1.7	2.0	1.7	1.6	1.7	1.6	1.7	1.7	1.6
Veterans Administration	3.5	3.3	3.2	3.3	3.1	3.3	3.2	3.2	3.0	3.0	2.8
All other departments and agencies	0.3	0.3	0.3	0.9	0.7	0.3	0.3	0.3	0.2	0.2	0.2

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[1] Data for fiscal year ending September 30; all other data for fiscal year ending June 30.

[2] Formerly a part of the Department of Health, Education, and Welfare.

[3] Data for the Atomic Energy Commission, Energy Research and Development Administration, and Department of Energy form a continuous series.

SOURCE: Office of Program Planning and Evaluation, National Institutes of Health, Public Health Service: Selected data.

APPENDIX I: Sources and Limitations of Data

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Contents

Introduction 221

Department of Health and Human Services
Public Health Service
Office of Health Research, Statistics, and Technology
National Center for Health Statistics

National Vital Registration System 222
National Survey of Family Growth 222
National Health Interview Survey 223
National Health Examination Survey 223
National Health and Nutrition Examination Survey 223
National Master Facility Inventory 224
National Hospital Discharge Survey 224
National Nursing Home Survey 225
National Ambulatory Medical Care Survey 225
National Survey of Personal Health Practices and Consequences 226
National Center for Health Services Research 226
National Medical Care Expenditure Survey 226
Household Survey 226
Physicians' Practice Survey 226
Employer Health Insurance Cost Survey 227
Health Insurance/Employer Survey 227

Health Resources Administration
Bureau of Health Professions

Medical Specialist Supply Projections 228
Health Manpower Shortage Areas 228

Center for Disease Control
Bureau of Epidemiology

National Morbidity Reporting System 229
Abortion Surveillance 229

Bureau of State Services

U.S. Immunization Survey 229

Alcohol, Drug Abuse, and Mental Health Administration
National Institute of Mental Health

Surveys of Mental Health Facilities 230

Health Care Financing Administration
Office of Research, Demonstrations, and Statistics

Estimates of National Health Expenditures 230

Department of Commerce
Bureau of the Census

U.S. Census of Population 230
Current Population Survey 231
Population Estimates and Projections 231

Department of Labor
  Bureau of Labor Statistics

    Consumer Price Index 231
    Employment and Earnings 232

Environmental Protection Agency

    National Aerometric Surveillance Network 232

United Nations

    Demographic Yearbook 232

  World Health Organization

    World Health Statistics Annual 232

Alan Guttmacher Institute

    Abortion Survey 233

American Dental Association

    Survey of Dental Practice 233

American Hospital Association

    Annual Survey of Hospitals 233

American Medical Association

    Physician Masterfile 233
    Annual Census of Hospitals 234

Appendix I: Sources and Limitations of Data

Introduction

This report consolidates the most current data on the health of the population of the United States, the availability and use of health resources, and health care expenditures. The information was obtained from the data files and/or published reports of many governmental and nongovernmental agencies and organizations. In each case, the sponsoring agency or organization collected data using its own methods and procedures. Therefore, the data in this report vary considerably with respect to source, method of collection, definitions, and reference period.

Generally, the data presented in the detailed tables are from the ongoing data collection systems of the National Center for Health Statistics (NCHS). However, health care manpower data come primarily from the Bureau of Health Professions, Health Resources Administration, and the American Medical Association. National health expenditures data were compiled by the Office of Research, Demonstrations, and Statistics, Health Care Financing Administration.

Although a detailed description and comprehensive evaluation of each data source is beyond the scope of this appendix, users should be aware of the general strengths and weaknesses of the different data collection systems. For example, population-based surveys obtain socioeconomic data, data on family characteristics, and information on the impact of an illness, such as days lost from work or limitation of activity. They are limited by the amount of information a respondent remembers or is willing to report. Detailed medical information, such as precise diagnoses or the types of operations performed, may not be known and so will not be reported. Conversely, health care providers, such as physicians and hospitals, usually have good diagnostic information but little or no information about the socioeconomic characteristics of individuals or the impact of an illness on the individual.

The population covered by different data collection systems may not be the same, and understanding the differences is critical to interpreting the data. Data on vital statistics and national expenditures cover the entire population. Most data on morbidity and utilization of health resources cover only the civilian noninstitutionalized population. Thus, statistics are not included for military personnel, who are usually young; for institutionalized people, who may be any age; or for nursing home residents, who are usually old.

All data collection systems are subject to error, and records may be incomplete or contain inaccurate information. People may not remember essential information, a question may not mean the same thing to different respondents, and some institutions or individuals may not respond at all. The sponsoring agencies do the best they can, but it is not always possible to measure the magnitude of these errors or their impact on the data. Where possible, the tables have notes describing the universe and the method of data collection to enable the user to place his or her own evaluation on the data. In many instances, data do not add to totals because of rounding.

Statistics based on samples have sampling errors in addition to errors mentioned above. A sampling error is a measure of the variability introduced because only a sample of the universe was taken. The fact that a sample has an additional source of error does not mean that sample data are less reliable than full-count data. Frequently, the money saved by taking only a sample is spent on reducing other forms of error through more pretesting of survey forms, better quality control, and other measures.

The descriptive summaries that follow provide a general overview of study design, methods of data collection, and reliability and validity of the data. More complete and detailed discussions are found in the publications referenced at the end of each summary. The data set or source is listed under the agency or organization that sponsored the data collection.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY

National Center for Health Statistics

National Vital Registration System

The vital registration system of the National Center for Health Statistics (NCHS) collects and publishes data on births, deaths, marriages, and divorces in the United States. Fetal deaths are classified and tabulated separately from other deaths. The Division of Vital Statistics obtains information on births and deaths from the registration offices of all States, certain cities that perform their own data collection, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. Geographic coverage for births and deaths has been complete since 1933.

Until 1972, microfilm copies of all death certificates and a 50-percent sample of birth certificates were received from all registration areas and processed by NCHS. Beginning in 1972, some States began sending their data to NCHS through the Cooperative Health Statistics System (CHSS). States that participate in the CHSS program process 100 percent of their death and birth records and send the entire data file to NCHS on computer tape. The number of participating States has grown from 6 in 1972 to 44 in 1980.

The standard certificates of birth, death, and fetal death recommended by NCHS are modified in each registration area to serve the area's needs. However, most certificates conform closely in content and arrangement to the standard certificate, and all certificates contain a minimum data set specified by NCHS.

In most areas, practically all births and deaths are registered. The most recent survey of the completeness of birth registration, conducted on a sample of births from 1964 to 1968, showed that 99.3 percent of all births in the United States during that period were registered. No comparable information is available for deaths, but it is generally believed that death registration in the United States is at least as complete as birth registration.

For more information, see: National Center for Health Statistics, *Vital Statistics of the United States, 1976,* Vol. I, DHHS Pub. No. (PHS) 80-1103 and Vol. II, Part A, DHEW Pub. No. (PHS) 79-1114, Public Health Service, Washington, U.S. Government Printing Office, 1980 and 1979.

National Survey of Family Growth

Data from the National Survey of Family Growth (NSFG) are based on a five-stage area probability sample of civilian noninstitutionalized women living in the coterminous United States who are 15-44 years of age and who are currently married, previously married, or never married but have offspring living in the household.

The counties and independent cities of the United States were combined to form a frame of primary sampling units (PSU's), and 101 PSU's were selected as the first-stage sample for Cycle I of NSFG, conducted from June 1973 to February 1974. The next three stages produced a clustered sample of 28,998 households within the 101 PSU's. At 26,028 of these households (89.8 percent), a household screener interview was completed. These screeners produced a fifth-stage sample of 10,879 women, of which 9,797 were interviewed.

Cycle II of NSFG was conducted from January to September 1976. The sample design was basically the same as it was in Cycle I. The sample consisted of 27,162 households in 79 PSU's. Household screener interviews were completed at 25,479 of these households (93.8 percent). Of the 10,202 women in the sample, 8,611 were interviewed.

In order to produce estimates for the entire population of eligible women in the United States, data for the interviewed sample women were inflated by the reciprocal of the probability of selection at each stage of sampling and adjusted for both screener and interview nonresponse. In addition, estimates for ever-married women in 12 age-race categories were poststratified to benchmark population values based on data from the Current Population Survey of the U.S. Bureau of the Census.

Quality control procedures for interviewer selection, interviewer training, field listing, and data processing were built into NSFG to minimize nonsampling error and bias. In addition, the nonresponse adjustments in the estimator were designed to minimize the effect of nonresponse bias by assigning to nonrespondents the characteristics of similar respondents. Sampling errors for NSFG were estimated by balanced half-sample replication.

Discussion of the balanced half-sample technique, summary sampling error charts, and detailed information on the NSFG sample design are available in the following reports: National Center for Health Statistics, National Survey of Family Growth, Cycle I, sample design, estimation procedures, and variance estimation, by D. K. French, *Vital and Health Statisics,* Series 2-No 76, DHEW Pub. No. (PHS) 78-1350, Public Health Service, Washington, U.S. Government Printing Office, Jan. 1978, and National Center for Health Statistics, National Survey of Family Growth, Cycle II, sample design, estimation procedures, and variance estimation, by W. R. Grady, *Vital and Health Statistics,* Series 2-No. 87, DHHS Pub. No. (PHS) 81-1361, Public Health Service, Washington, U.S. Government Printing Office, Feb. 1981.

National Health Interview Survey

The National Health Interview Survey (NHIS) is a continuing nationwide sample survey in which data are collected through personal household interviews. Information is obtained on personal and demographic characteristics, illnesses, injuries, impairments, chronic conditions, utilization of health resources, and other health topics. The household questionnaire is reviewed each year, with supplemental topics being added or deleted. For most topics, data are collected over an entire calendar year. The universe for NHIS is the civilian noninstitutionalized population of the United States. Members of the Armed Forces, U.S. nationals living in foreign countries, and persons who died during the reference period are excluded.

The survey is based on a multistage, probability cluster sample of 376 primary sampling units selected from approximately 1,900 geographically defined units in the first stage, and 12,000 segments containing about 42,000 eligible occupied households in the final stage. The usual NHIS sample is about 111,000 persons in 41,000 interviewed households in a year. The response rate is ordinarily about 96 percent of the eligible households. National estimates are based on a four-stage estimation procedure involving inflation by the reciprocal of the probability of selection, a nonresponse adjustment, ratio adjustment, and poststratification.

For more detailed information on NHIS design, limitations of data, and sampling errors of the estimates, see: National Center for Health Statistics, Current estimates from the National Health Interview Survey, United States, 1979, by S. S. Jack and P. W. Ries, *Vital and Health Statistics*, Series 10-No. 136, DHEW Pub. No. (PHS) 81-1564, Public Health Service, Washington, U.S. Government Printing Office, 1981.

National Health Examination Survey

The National Health Examination Survey (NHES) is a continuing nationwide sample survey conducted by the National Center for Health Statistics in which data for determining the health status of the population are collected through direct standardized physical examinations, clinical and laboratory tests, and measurements. The content of the NHES program is revised periodically and selected components are added or deleted to meet the current needs for health data of this type.

For the first program or cycle of the National Health Examination Survey (NHES I), 1960-62, data were collected on the total prevalence of certain chronic diseases as well as the distributions of various physical and physiological measures, including blood pressure and serum cholesterol levels. For that program, a highly stratified, multistage probability sample of 7,710 adults, of whom 86.5 percent were examined, was selected to represent the 111 million civilian noninstitutionalized adults 18-79 years of age in the United States at that time. The sample areas consisted of 42 primary sampling units (PSU's) from the 1,900 geographic units.

In 1971, a nutrition surveillance component was added and the survey name was changed to the National Health and Nutrition Examination Survey.

For further information on NHES I, see: National Center for Health Statistics, Cycle I of the National Health Examination Survey, sample and response, United States, 1960-1962, T. Gordon and H. W. Miller, *Vital and Health Statistics*, PHS Pub. No. 1000-Series 11-No. 1, Public Health Service, Washington, U.S. Government Printing Office, Apr. 1964.

National Health and Nutrition Examination Survey

This survey collects health-related data that can be obtained only by direct physical examinations, clinical and laboratory tests, and related measurement procedures. In the first National Health and Nutrition Examination Survey (NHANES-I), a major purpose was to measure and monitor indicators of the nutritional status of the American people through dietary intake data, biochemical tests, physical measurements, and clinical assessments for evidence of nutritional deficiency. Detailed examinations were given by dentists, ophthalmologists, and dermatologists with an assessment of need for treatment. In addition, data were obtained for a subsample of adults on overall health care needs and behavior, and more detailed examination data were collected on cardiovascular, respiratory, arthritic, and hearing conditions.

The NHANES-I target population was the civilian noninstitutionalized population 1-74 years of age residing in the coterminous United States, except for people residing on any of the reservation lands set aside for the use of American Indians. The sample design was a multistage, stratified probability sample of clusters of persons in land-based segments. The sample areas consisted of 65 primary sampling units (PSU's) selected from the 1,900 PSU's in the coterminous United States. A subsample of persons 25-74 years of age was selected to receive the more detailed health examination. Groups at high risk of malnutrition were oversampled at known rates throughout the process.

Household interviews were completed for more than 96 percent of the 28,043 persons selected for the NHANES-I sample, and about 75 percent (20,749) were examined between 1971 and 1974.

The estimation procedure used to produce national statistics involved inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and poststratified ratio adjustment to population totals. Sampling errors also were estimated to measure the reliability of the statistics.

For more information on NHANES-I, see: National Center for Health Statistics, Plan and operation of the National Health and Nutrition Examination Survey, United

States, 1971-1973, by H. W. Miller, *Vital and Health Statistics,* Series 1-Nos. 10a and 10b, DHEW Pub. No. (HSM) 73-1310, Health Services and Mental Health Administration, Washington, U.S. Government Printing Office, Feb. 1973; and National Center for Health Statistics, Plan and operation of the NHANES-I Augmentation Survey of adults 25-74 years, United States, 1974-1975, by A. Engel, R. S. Murphy, K. Maurer, and E. Collins, *Vital and Health Statistics,* Series 1-No. 14, DHEW Pub. No. (PHS) 78-1314, Public Health Service, Washington, U.S. Government Printing Office, June 1978.

National Master Facility Inventory

The National Master Facility Inventory (NMFI) is a comprehensive file of inpatient health facilities in the United States. The three broad categories of facilities in NMFI are hospitals, nursing and related care homes, and other custodial or remedial care facilities. To be included in NMFI, hospitals must have at least six inpatient beds, and nursing and related care homes must have at least three inpatient beds.

NMFI is kept current by the periodic addition of names and addresses obtained from State licensing agencies for all newly established inpatient facilities. In addition, annual surveys of hospitals and periodic surveys of nursing homes and other facilities are conducted to update name and location, type of business, number of beds, and number of residents or patients in the facilities.

From 1968 through 1975, the hospital survey was conducted in conjunction with the American Hospital Association (AHA) Annual Survey of Hospitals. AHA performed the data collection for its member hospitals, while the National Center for Health Statistics (NCHS) collected the data for the approximately 400 non-AHA registered hospitals. Since 1976, however, all of the data collection has been performed by AHA.

Hospitals are requested to report data for the full year ending September 30. More than half of the responding hospitals used this reporting period for the 1979 Survey. The remaining hospitals used various other reporting periods.

The nursing home and other facilities survey was conducted by NCHS in 1963, 1967, 1969, 1971, 1973, 1976, and 1978. In 1978, data for 26 States were collected at least partially through the Cooperative Health Statistics System (CHSS). There may have been changes in data collection procedures, coverage, definitions, and concepts in preliminary data from these 26 States in 1978.

The response rate for the 1979 hospital survey was about 90 percent. Low response rates and other reporting difficulties with the 1978 nursing home and other facilities survey prevented the use of 1978 nursing home data for California, New York, North Carolina, and the District of Columbia; 1976 data have been substituted for these four areas. Also due to low response rates, the 1978 data on other facilities did not meet NCHS standards of reliability and precision and are not available.

Statistics derived from the hospital and nursing home and other facilities surveys were adjusted for both facility and item nonresponse. Missing items on the questionnaire were imputed, when possible, by using information reported by the same facility in a previous survey. When data were not available from a previous census for a responding facility, the data were imputed by using data from similar responding facilities. Similar facilities are defined as those with the same types of business, ownership, service, and approximately the same bed size.

For more detailed information on NMFI, see: National Center for Health Statistics, Design and methodology of the 1967 Master Facility Inventory Survey, by G. G. Hollis, *Vital and Health Statistics,* PHS Pub. No. 1000-Series 1-No. 9, Public Health Service, Washington, U.S. Government Printing Office, Jan. 1971.

National Hospital Discharge Survey

The National Hospital Discharge Survey (NHDS) is a continuing nationwide sample survey of short-stay hospitals in the United States. The scope of NHDS encompasses patients discharged from noninstitutional hospitals, exclusive of military and Veterans Administration hospitals, located in the 50 States and the District of Columbia. Only hospitals having six or more beds for patient use and those in which the average length of stay for all patients is less than 30 days are included in the survey. Although all discharges of patients from these hospitals are within the scope of the survey, discharges of newborn infants from all hospitals are excluded from this report as well as discharges of all patients from Federal hospitals.

The sample was selected from a frame of about 7,500 short-stay hospitals listed in the National Master Facility Inventory. A two-stage stratified sample design was used, and hospitals were stratified according to bed size and geographic region. The largest hospitals were selected with certainty in the sample, and the probability of selection of a hospital decreased as the bed size of the hospital decreased. Within each sample hospital, a systematic random sample of discharges was selected from the daily listing sheet. The within-hospital sampling ratio for selecting discharges varied inversely with the probability of selection of the hospital, so that the overall probability of selecting a discharge was approximately the same in each bed-size class.

Survey hospitals used an abstract form to transcribe data from the face sheet of hospital records. Forms were completed either by hospital staff or representatives of the National Center for Health Statistics.

The basic unit of estimation for NHDS was the sample patient abstract. The estimation procedure involved inflation by the reciprocal of the probability of selection, adjustment for nonresponding hospitals and missing abstracts, and ratio adjustments to fixed totals. Of the 544 hospitals selected for the survey, 496 were within the scope of the survey, and 431 participated in the survey in 1979. Data were abstracted from about 215,000 medical records.

For more detailed information on the design of NHDS and the magnitude of sampling errors associated with NHDS estimates, see: National Center for Health Statistics, Utilization of short-stay hospitals, annual summary for the United States, 1978, by B. J. Haupt, *Vital and Health Statistics,* Series 13-No. 46, DHEW Pub. No. (PHS) 80-1797, Public Health Service, Washington, U.S. Government Printing Office, Mar. 1980.

National Nursing Home Survey

Two sample surveys were conducted by the National Center for Health Statistics to obtain information on nursing homes, their expenditures, residents, staff, and, in the most recent survey, discharged patients. The first survey was conducted between August 1973 and April 1974. The most recent National Nursing Home Survey (NNHS) was conducted from May through December 1977.

Data on facilities were collected by personal interviews with administrators; facility accountants completed questionnaires on expenditures. Resident data were collected by a nurse familiar with the care provided to the resident. The nurse relied on the medical record and personal knowledge of the residents. Employees completed a self-administered questionnaire. Discharge data, collected only in the most recent NNHS, were based on information recorded in the medical record.

For the initial survey conducted in 1973-74, the universe included only those nursing homes that provided some level of nursing care. Thus, homes providing only personal or domiciliary care were excluded. The sample of 2,118 homes was selected from the 17,685 homes that provided some level of nursing care and were listed in the 1971 National Master Facility Inventory (NMFI) or those which opened for business in 1972. Data were obtained from about 20,600 staff and 19,000 residents. Response rates were 97 percent for facilities, 88 percent for expenditures, 98 percent for residents, and 82 percent for staff.

The scope of the 1977 NNHS encompassed all types of nursing homes, including personal care and domiciliary care homes. The sample of about 1,700 facilities was selected from 23,105 nursing homes in the sampling frame, which consisted of all homes listed in the 1973 MFI and those opening for business between 1973 and December 1976. Data were obtained from about 13,600 staff, 7,000 residents, and 5,100 discharged residents. Response rates were 95 percent for facilities, 85 percent for expenses, 81 percent for staff, 99 percent for residents, and 97 percent for discharges.

Statistics from NNHS were derived by a ratio-estimating procedure. Statistics were adjusted for failure of a home to respond, failure to fill out one of the questionnaires, and failure to complete an item on a questionnaire.

For more information on the 1973-74 NNHS, see: National Center for Health Statistics, Selected operating and financial characteristics of nursing homes, United States, 1973-74 National Nursing Home Survey, by M. R. Meiners, *Vital and Health Statistics,* Series 13-No. 22, DHEW Pub. No. (HRA) 76-1773, Health Resources Administration, Washington, U.S. Government Printing Office, Dec. 1975. For more information on the 1977 NNHS, see: National Center for Health Statistics, The National Nursing Home Survey, 1977 summary for the United States, by J. F. Van Nostrand, A. Zappolo, and E. Hing, et al., *Vital and Health Statistics,* Series 13-No. 43, DHEW Pub. No. (PHS) 79-1794, Public Health Service, Washington, U.S. Government Printing Office, July 1979.

National Ambulatory Medical Care Survey

The National Ambulatory Medical Care Survey (NAMCS) is a continuing national probability sample of ambulatory medical encounters. The scope of the survey covers physician-patient encounters in the offices of nonfederally employed physicians classified by the American Medical Association or American Osteopathic Association as "office-based, patient care" physicians. Excluded are visits to hospital-based physicians, visits to specialists in anesthesiology, pathology, and radiology, and visits to physicians who are principally engaged in teaching, research, or administration. Telephone contacts and nonoffice visits are also excluded.

A multistage probability design is employed. The first-stage sample consists of 87 primary sampling units (PSU's) selected from about 1,900 such units into which the United States has been divided. In each sample PSU, a sample of practicing physicians is selected. The final stage involves selection within a randomly assigned 7-day reporting period, and the selection of samples of patient visits during that period.

For the 1979 survey, 3,023 physicians were selected for the sample, of whom 2,482 were found to be eligible for NAMCS and were asked to participate. A total of 1,783 physicians (71.8 percent of those eligible) participated in the study, providing data concerning a random sample of about 45,351 patient visits.

The estimation procedure used in NAMCS basically has three components: inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and ratio adjustment to fixed totals.

For more detailed information on the design of NAMCS and the magnitude of sampling errors associated with NAMCS estimates, see: National Center for Health Statistics, 1977 Summary, National Ambulatory Medical Care Survey, by T. Ezzati and T. McLemore, *Advance Date From Vital and Health Statistics,* No. 48, DHEW Pub. No. (PHS) 79-1250, Public Health Service, Hyattsville, Md., Apr. 13, 1979.

National Survey of Personal Health Practices and Consequences

The National Survey of Personal Health Practices and Consequences (NSPHPC) was a two-wave, panel, telephone survey of adults 20-64 years of age residing in telephone households in the coterminous United States. The survey, funded by the Office of Disease Prevention and Health Promotion, was designed to collect data on the extent and distribution of personal health practices, their stability over time, and their relationship to morbidity and mortality. Questions were asked concerning personal health practices, self-perceived health status, health care utilization, social support, psychological well-being, occupation-related health factors, life events, and sociodemographic characteristics. Respondents were also asked to provide information to permit future linking of respondent records with the National Death Index developed by the National Center for Health Statistics.

The sampling plan, a two-stage stratified cluster design, used a random-digit-dialing procedure to select sample telephone households. Within "eligible" households containing one or more persons 20 to 64 years of age, one respondent was randomly selected. Self-reporting was required for all questions. Wave I interviews, conducted in the Spring of 1979, were completed for 3,025 adults 20-64 years of age, representing a response rate of 81 percent. Wave II interviews, conducted in the Spring of 1980, were completed for 80 percent of the persons interviewed in Wave I.

For more detailed information on the NSPHPC design, limitations of the data, and sampling errors, see: National Center for Health Statistics, Highlights from Wave I of the National Survey of Personal Health Practices and Consequences, United States, 1979, by K. M. Danchik and C. A. Schoenborn, *Vital and Health Statistics,* Series 15-No. 1, DHHS Pub. No. (PHS) 81-1162. Public Health Service, Washington, U.S. Government Printing Office, June 1981.

National Center for Health Services Research

National Medical Care Expenditure Survey

The National Medical Care Expenditure Survey (NMCES) is a nationwide sample survey of health expenditures for and use of personal health services and individual and family health insurance coverage during 1977. Data were collected in five separate but complementary survey components, 4 of which are discussed below. Data for NMCES were collected by Research Triangle Institute, North Carolina, and its subcontractors, National Opinion Research Center of the University of Chicago, and Abt Associates, Inc., of Cambridge, Mass.

Household Survey—This component consisted of about 14,000 randomly selected households in the civilian noninstituionalized population who were interviewed six times over an 18-month period during 1977 and 1978 concerning their use of health services, expenditures, and health insurance coverage.

The Household Survey sample was designed to produce statistically unbiased national estimates that are representative of the civilian noninstitutionalized population of the United States. To this end, the study used the national multistage area samples of the Research Triangle Institute and the National Opinion Research Center. Data were obtained for about 91 percent of eligible households in the first interview and 82 percent in the sixth interview.

For a detailed description of the survey sample and of sampling, estimation, and adjustment methods, including weighting for nonresponse and poststratification, see: National Center for Health Services Research, NMCES estimation and sampling variances in the Household Survey, by S. B. Cohen and W. D. Kalsbeek, *National Health Care Expenditure Study,* DHHS Pub. No. (PHS) 81-3281, Public Health Service, Hyattsville, Md., June 1981. For the questions used in the survey, see: National Center for Health Services Research, NMCES household interview instruments, by G. S. Bonham and L. S. Corder, *National Health Care Expenditure Study,* DHHS Pub. No. (PHS) 81-3280, Public Health Service, Hyattsville, Md., April 1981.

Physicians' Practice Survey—This component was based on a sample of physicians providing care to sample household members on the characteristics of these physicians and their practices. The sample frame for the Physicians' Practice Survey (PPS) consisted of the physicians (doctors of medicine and doctors of osteopathy) who provided care to 25 percent of the NMCES household survey members. Pathologists, anesthesiologists, and radiologists were not eligible. Physicians were asked about their place and mode of practice, hours worked weekly, the site of care, and about their age, specialty, board certification, and practice and other income. Of those physicians eligible, 67 percent completed the PPS interview. An additional 19 percent did not complete the interview but provided information required for weighting purposes.

The sample weights for the data were calculated on the basis of the joint probability that a particular respondent was selected for inclusion in the Household Survey and the Physicians' Practice Survey sample frame, and a particular physician was named by one of the household respondents. The first component of this weight is based on the household respondent's weight. The second component of the weight is based on the number of unique patients whom the specific physician had seen in his or her practice during 1977. Poststratification adjustments were made to the household weights according to Bureau of the Census estimates of the United States population by age, color, and sex. Poststratification adjustments to the physician weights were made to match data from the American Medical Association[1] on the distribution of medical specialties and from the Drug Enforcement Administration[2] on the geographic distribution of physicians. The methods of calculating these sampling weights will be described in a forthcoming report from the National Center for Health Services Research.

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[1] Goodman, L. J.: ***Physician Distribution and Medical Licensure in the U.S., 1976.*** **Chicago. American Medical Association, 1977.**

Employer Health Insurance Cost Survey—This component was used to obtain information on the cost of health insurance coverage to both employers and employees and on the characteristics of employees eligible for employment-related health insurance. The sample for the Employer Health Insurance Cost Survey (EHICS) was designed to produce statistically unbiased national estimates of employers and their employees in the civilian noninstitutionalized population of the United States. To this end, a sample of employers in the 50 States and the District of Columbia was obtained from information provided by NMCES household respondents who were selected from the national multistage area samples of the Research Triangle Institute and the National Opinion Research Center.

The EHICS sampling frame consisted of all persons in the NMCES household sample who reported that they were employed but not self-employed at any time during 1977. Employers were then identified either from permission forms authorizing the collection of detailed personal health insurance information or by means of a special NMCES telephone survey.

Since every employer in the Nation employs one or more persons, each eligible to be selected for the NMCES household survey, every employer had a positive probability of being included in the EHICS survey. The methods of calculating the sampling weights used to account for firm size, nonresponse, and varying sampling rates will be described in a forthcoming report from the National Center for Health Services Research.

A two-page questionnaire was mailed to this sample of employers that asked about the number and characteristics of their employees during 1977; their total 1977 health insurance premiums; employer and employee contributions to this premium; the number and salary level of employees eligible to participate in their health insurance plan(s); and total payroll expenditures.

Questions concerning the extent of coverage and the number of employees actually covered by these health insurance plan(s) were not asked. Thus, the estimates of mean premiums and employer and employee contributions are based on the number of eligible employees as calculated from information supplied by the employer. Because not all employees eligible for participation in health insurance plans may in fact have joined, the estimates of mean premiums and of the contribution per eligible employee are probably lower than would be true for estimates based on covered employees only. Also, they do not represent the insurance status of the employed population as a whole, since some employees obtain coverage outside of their place of employment. Furthermore, some employers were unable to separate health insurance from other insurance (life and disability) benefits. For this group of employers, it was assumed that 83 percent of the total premium was applicable to health insurance.[3]

When EHICS respondents were unable to answer a question, values of missing data for total annual health insurance premiums, employer and employee contributions, and total payroll were imputed to firms from others with similar characteristics, such as size of workforce, U.S. Census region, and labor union status. Imputation procedures used for the survey will be described in a forthcoming report from the National Center for Health Services Research.

The EHICS questionnaire was mailed to approximately 9,700 employers between November 1978 and June 1979 by the Research Triangle Institute; 85.5 percent of eligible employers responded.

Health Insurance Employer Survey—This component collected data from employers and insurance carriers concerning the health insurance coverage of individuals and families in the household survey. The sample for the Health Insurance/Employer Survey (HIES) was obtained in the second and fifth interview round of the household survey. In the second interview round, all members of the household sample who were covered by nongroup policies that were obtained directly from health insurance carriers were asked to sign permission forms enabling the data collection contractor to request additional information about their insurance from the carrier. Also during this round, primary subscribers of 25 percent of households in the sample were asked to sign permission forms for anyone covered by health insurance obtained through a group arrangement, which proved to be most often through an employer. During the fifth household interview, permission forms were obtained from the remaining households with members covered by group insurance and from anyone who had purchased private, nongroup insurance since the second interview round. In all, signed permission forms were obtained from approximately 88 percent of the primary subscribers who reported that they were covered by some type of insurance, whether group or nongroup.

In addition, persons who reported that they were not covered by an employment-related health insurance plan, but who were employed and not self-employed, were asked during the fifth interview round to sign a permission form for the Uninsured Validation Survey (UVS), a subcomponent of HIES. Approximately 66 percent of the household members eligible for the UVS signed this permission form. The purpose of the UVS was to confirm through the employer that these people were not in fact covered by employment-related health insurance. If an employer stated that such a person was insured at some time during 1977, information about the health insurance plan was obtained. Data were also obtained in the UVS about all of the health insurance plans that were available to employees through their employers, even if the household or individual did not choose a particular plan or even to be covered at all. If the employer did not offer a plan, this information was also noted.

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[2] Computer File, Doctors of Medicine and Osteopathy, Office of Information Services, Drug Enforcement Administration, Washington, D.C.

[3] Yohalem, M.: Employee-benefit plans, 1975. *Soc. Sec. Bull.* 40(11):19-28, Nov. 1977.

For each health insurance plan reported in the household survey, the HIES questionnaire asked employers and other policyholders (in the case of group insurance) or insurance carriers (in the case of nongroup policies) to indicate whether the person or household was in fact insured at any time during 1977.

Wherever coverage was verified, the HIES or the UVS respondent was asked if the policy covered a family, a couple, or a single person. In HIES, it was also determined whether the policy was issued on a group or nongroup basis. Data were obtained on the total annual premium for the plan, the amount paid by the insured, and the names of and payments by other contributors to the premium. The HIES and UVS respondents or employers were asked to send Abt Associates, Inc., a copy of the policy or group insurance certificate for each plan in which the household member was enrolled.

Those HIES respondents who provided group insurance and UVS respondents were asked for additional information about the size of the group covered under each policy held by a household sample member. They were also asked to indicate what other options or plans members of the household sample could have purchased. For each option, data were obtained on premiums and the amount that would have been paid by the household; copies of the policy or certificate were requested as well.

Roughly 16,000 HIES and UVS questionnaires were mailed to insurance carriers and group policyholders between October 1978 and August 1979. Data were obtained for 84 percent of the household members who had signed one or both types of permission forms. The policies and certificates obtained for both elected and optional insurance plans were subsequently abstracted onto forms developed for the Rand Corporation Health Insurance Study sponsored by the Department of Health and Human Services.

When HIES respondents were unable to answer questions about the premiums or sources and amounts of premium payments for a household member's plan, these data were imputed from responses for other insured individuals with characteristics similar to the household members with missing data. These characteristics included age, sex, marital status, geographic region of residence, employment, and industry of employment. Characteristics of the person's insurance policy were considered as well, including whether it was a group or nongroup policy, whether coverage was provided on an individual, couple, or family basis, and the types of benefits. Imputation procedures used for the survey will be described in a forthcoming report from the National Center for Health Services Research.

To obtain statistically unbiased national estimates representative of the civilian noninstitutionalized population of the United States, the household survey weights were adjusted to account for permission forms that were not signed and for nonresponse of carriers and group policyholders in HIES and UVS. The methods of calculating the sampling weights used to account for nonresponse will be described in the forthcoming report

HEALTH RESOURCES ADMINISTRATION

Bureau of Health Professions

Medical Specialist Supply Projections

In an ongoing effort, the Division of Manpower Analysis, Bureau of Health Professions (formerly the Bureau of Health Manpower), evaluates both the current and future supply of health manpower in the various occupations.

The 1974 supply of active physicians (M.D.'s) by specialty was used as the starting point for the projections of active physicians published in 1980. The major source of data used to obtain 1974 figures was the American Medical Association (AMA) Physician Masterfile.

The projections were derived essentially from two distinct estimation matrices. The first matrix produced a "basic" projection of year-by-year future M.D. graduates and separations from the active workforce by country of medical education. Estimates of first-year enrollments, student attrition, other medical school-related trends, and a model of foreign and Canadian medical graduate immigration were used. The second matrix distributed the future graduates and separations by specialty, disaggregated by country of medical education. Projections of first-year residency trends were used, and deaths and retirements of active practitioners were distributed among the specialties proportionate to the supply in each specialty as of 1974. Mortality and retirement losses were computed by 5-year age cohorts on an annual basis, using age distributions and mortality and retirement rates from AMA data.

For more information, see: Bureau of Health Manpower, *The Current and Future Supply of Physicians and Physician Specialists,* DHEW Pub. No. (HRA) 80-60, Health Resources Administration, Hyattsville, Md., 1980.

Health Manpower Shortage Areas

Designation of Health Manpower Shortage Areas is an ongoing activity of the Division of Health Professions Analysis, Bureau of Health Professions.

Shortage areas are designated for seven professional categories in connection with three Federal programs: the

National Health Service Corps, Loan Repayment and Scholarship programs.

The designations are also used to determine funding priorities for other programs. Areas may be considered for shortage area designation by submitting an application with supporting documentation to the Bureau of Health Professions. Criteria for designation are defined in Department of Health and Human Services regulations. Interim final regulations were published in the Federal Register on Jan. 10, 1978. Final regulations are currently being developed.

For more information, write: Distribution Studies Branch, Division of Health Professions Analysis, Bureau of Health Professions, Health Resources Administration, 3700 East-West Highway, Hyattsville, Md. 20782.

CENTER FOR DISEASE CONTROL

Bureau of Epidemiology

National Morbidity Reporting System

This is a system for collecting demographic, clinical, and laboratory data primarily from State and territorial health agencies to provide national surveillance for conditions such as rabies, aseptic meningitis, diphtheria, tetanus, encephalitis, foodborne outbreaks, and others. Completeness of reporting varies greatly, since not all cases receive medical care and not all treated conditions are reported. Reporting is voluntary.

Estimates of underreporting have been made for two diseases—measles and viral hepatitis. It is generally accepted that about 10-15 percent of all cases of measles that occur in the United States are reported to the Center for Disease Control (CDC). About 15-20 percent of all cases of viral hepatitis are reported to CDC.

Depending on the disease, data are collected weekly or monthly and are analyzed to detect epidemiologic trends or to locate cases requiring control efforts. Data are published weekly and summarized annually. For more information, see: Center for Disease Control, Reported morbidity and mortality in the United States, 1979, *Morbidity and Mortality Weekly Report,* 28(54), Sept. 1980, or write to Center for Disease Control, Chief, Consolidated Surveillance and Communications Activity, Bureau of Epidemiology, Atlanta, Ga. 30333.

Abortion Surveillance

The Center for Disease Control (CDC) acquires abortion service statistics by State of occurrence from two sources—central health agencies and hospitals and facilities. Since the initiation of epidemiologic surveillance of abortion in 8 States in 1969, the number of States from which statewide abortion data are reported increased to 48 in 1978. Most of the 45 central health agencies have established direct reporting systems, although a few collected data by surveying abortion facilities. Inquiries by CDC to hospitals and facilities provided information for 4 States that did not collect statewide abortion data.

The total number of abortions reported to CDC is about 18 percent less than the total estimated independently by the Alan Guttmacher Institute, the research and development division of the Planned Parenthood Federation of America, Inc.

For more information, see: Center for Disease Control, *Abortion Surveillance, 1978,* Public Health Service, DHHS, Atlanta, Ga., Nov. 1980, or write to Center for Disease Control, Director, Family Planning Evaluation Division, Bureau of Epidemiology, Atlanta, Ga. 30333.

Bureau of State Services

U.S. Immunization Survey

This system is the result of a contractual agreement between the Center for Disease Control and the U.S. Bureau of the Census. Estimates from the Immunization Survey are based on data obtained during the third week of each September for a subsample of households interviewed for the Current Population Survey, which is described separately in this appendix.

The reporting system contains demographic variables and vaccine history along with disease history when relevant to vaccine history. The system is used to estimate the immunization level of the Nation's child population against the vaccine preventable diseases; from time-to-time, immunization level data on the adult population are collected.

The scope of the U.S. Immunization Survey covers the 50 States and the District of Columbia. In the 1978 sample, approximately 41,000 household units were included in the survey sample. Six thousand sample units were found to be vacant or otherwise not to be interviewed. Of the approximately 35,000 occupied households eligible for interview, about 1,500 were not interviewed because the occupants either were not at home after repeated calls or were unavailable for some other reason.

The estimating procedure that was used involves the inflation of weighted sample results to independent estimates of the civilian noninstitutionalized population of the United States by age and race.

For more information, see: Center for Disease Control, *United States Immunization Survey, 1978,* DHEW Pub. No. (CDC)79-8221, Public Health Service, Atlanta, Ga., July 1979.

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION

National Institute of Mental Health

Surveys of Mental Health Facilities

The Survey and Reports Branch of the Division of Biometry and Epidemiology conducts several surveys of mental health facilities. Some of the data in this report are derived from more than one of these surveys. The response rate to most of the items on these surveys is relatively high (90 percent or better) as is the rate for data presented in this report. However, for some survey items, the response rate may be somewhat lower.

The Inventories of Mental Health Facilities are the primary source for NIMH data used in this report. This data system is based on questionnaires mailed by January of each year to mental health facilities in the United States, including psychiatric hospitals, non-Federal general hospitals with psychiatric services, residential treatment centers for emotionally disturbed children, federally funded community mental health centers, freestanding outpatient psychiatric clinics, and other types of multiservice or day-night facilities.

Other surveys conducted by the Survey and Reports Branch encompass sample surveys of patients coming under care in State, county, and private mental hospitals, outpatient psychiatric services, and general hospital inpatient psychiatric units. The purpose of these surveys is to determine the characteristics of patients served by these facilities.

For more information, write: Survey and Reports Branch, Division of Biometry and Epidemiology, National Institute of Mental Health, 5600 Fishers Lane, Rockville, Md. 20857.

Health Care Financing Administration

OFFICE OF RESEARCH, DEMONSTRATIONS, AND STATISTICS

Estimates of National Health Expenditures

Estimates of public and private expenditures for health are compiled annually by type of expenditure and source of funds. The data for several Federal health programs are taken from the Office of Management and Budget's special analysis of health programs, while data for the remaining Federal health programs are supplied directly by the various agencies.

Estimates for non-Federal expenditures come from an array of sources. American Hospital Association data on hospital finances, increased slightly to allow for osteopathic hospitals, are the primary source for estimates relating to hospital care. Estimated expenditures for the services of dentists and physicians in private practice are based on the gross income from self-employed practice reported to the Internal Revenue Service. The salaries of dentists and physicians on the staffs of hospitals and hospital outpatient facilities are considered a component of hospital care. Expenditures for the education and training of medical personnel are considered to be expenditures for education, and where they can be separated, they are excluded from health expenditures. Expenditures for drugs, drug sundries, eyeglasses, and appliances exclude those provided to inpatients and are estimated principally from the report of personal consumption expenditures in the U. S. Department of Commerce's national income accounts in the *Survey of Current Business.* Nursing home care expenditures by both public and private sources are based on data from the National Nursing Home Survey conducted by the National Center for Health Statistics. Data on the financial expenditures of health insurance organizations come from special Social Security Administration analyses of private health insurers. Expenditures for construction represent "value put in place" for hospitals, nursing homes, medical clinics, and medical research facilities but not for private office buildings providing office space for private practitioners.

For more specific information on items included and excluded and on general methodology used, see: National health expenditures, 1980, by R. M. Gibson, *Health Care Financing Review,* HCFA Pub. No. 03123, Health Care Financing Administration, Washington, U.S. Government Printing Office, Sept. 1981.

DEPARTMENT OF COMMERCE

Bureau of the Census

U.S. Census of Population

The census of population has been taken in the United States every 10 years since 1790. In the 1970 census, basic demographic data such as sex, race, age, and marital status were obtained from 100 percent of the enumerated population. In addition, information such as educational attainment, occupational status, and earnings were obtained from a 20-percent sample. More detailed data such as previous residence, veteran status, place of work, and country of birth of parents, were collected from a 15-percent sample; a 5-percent sample was asked about disability status, citizenship, length of marriage, vocational training, and the like.

Americans living overseas received a supplemental schedule. Detailed national data are tabulated and published as are data for areas as small as census tracts.

For information on undercoverage see: U.S. Bureau of the Census, *Estimates of Coverage of the Population by Sex, Race, and Age, Demographic Analysis* PHC(E)-4; and for tables of sampling errors for sampled data, see: *Census of Population 1970,* PC(1)-C, General Social and Economic Characteristics, Appendix C.

Current Population Survey

The Current Population Survey (CPS) is a household sample survey of the civilian noninstitutionalized population conducted monthly by the U.S. Bureau of the Census to provide estimates of employment, unemployment, and other characteristics of the general labor force, the population as a whole, and various other subgroups of the population.

A list of housing units from the 1970 census, supplemented by newly constructed units and households known to be missed in the 1970 census, provides the sampling frame in most areas for the present CPS. In some rural locations, current household listings of selected land areas serve as the frame.

The present CPS sample is located in 461 areas comprising 923 counties and independent cities with coverage in every State and the District of Columbia. In an average month during 1975, the number of housing units or living quarters designated for the national sample was about 58,000, of which about 3,000 were found to be nonexistent, demolished, or no longer used as living quarters. Of the remaining 55,000 units assigned for interview, about 45,000 were interviewed households, 2,000 were households at which the members were not available for interview, and 8,000 were found to be vacant, occupied by persons with usual residence elsewhere, or otherwise not eligible for interview.

The estimation procedure used involves inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and ratio adjustment.

For more information, see: U.S. Bureau of the Census, *The Current Population Survey, Design and Methodology,* Technical Paper 40, Washington, U.S. Government Printing Office, Jan. 1978.

Population Estimates and Projections

National estimates are derived by use of decennial census data as benchmarks and of data available from various agencies as follows: births and deaths (Public Health Service); immigrants (Immigration and Naturalization Service); the Armed Forces (Department of Defense); net movement between Puerto Rico and the U.S. mainland (Puerto Rico Planning Board); and Federal employees abroad (Civil Service Commission and Department of Defense). State estimates are based on similar data and also on a variety of data series, including school statistics from State departments of education and parochial school systems.

National population projections indicate the approximate future level and characteristics of the population under given assumptions as to future fertility, mortality, and net immigration. The method used to develop the projections involved preparation of projections of each of the components of population change—births, deaths, and net immigration—and the combination of these with July 1 estimates of the current population. Projections for States and metropolitan areas incorporate further assumptions about population redistribution through interarea migration.

Current estimates and projections are generally consistent with official decennial census figures and do not reflect the amount of estimated decennial census underenumeration.

For more information, see: U.S. Bureau of the Census, Projections of the Population of the United States, 1977 to 2050, *Current Population Reports,* Series P-25, No. 704, Washington, U.S. Government Printing Office, 1977.

DEPARTMENT OF LABOR

Bureau of Labor Statistics

Consumer Price Index

The Consumer Price Index (CPI) is a monthly measure of price change for a fixed "market basket" of goods and services. It is revised periodically to take into account changes in what Americans buy and in the way they live. The latest revision introduced (1) a new CPI for all urban consumers, (2) a revision of the CPI for urban wage earners and clerical workers, and (3) a modification of some categories within the medical care component. The new indexes were introduced with the release of January 1978 data.

In this report, all CPI data shown are for urban wage earners and clerical workers. Prices for 400 items were obtained in urban portions of 39 major statistical areas and 17 smaller cities that were chosen to represent all urban places in the United States. They were collected from about 18,000 establishments—grocery and department stores, hospitals, filling stations, and other types of stores and service establishments.

Prices of food, fuels, and a few other items were obtained every month in all 56 locations. Prices of most other commodities and services were collected every month in the five largest areas and every 3 months in other areas. Prices of most goods and services were obtained by personal visits of the Bureau's trained representatives. Mail questionnaires were used to obtain local transit fares, public utility rates, newspaper prices, fuel prices, and certain other items.

In calculating the index, price changes for the various items in each location were averaged together with weights that represent their importance in the spending of all wage earners and clerical workers. Local data were then combined to obtain a U.S. city average. Separate indexes were also published for 23 areas.

The index measures price changes from a designated reference date—1967—which equals 100. An increase of 22 percent, for example, is shown as 122. This change can also be expressed in dollars as follows: The price of a base period "market basket" of goods and services bought by urban wage earners and clerical workers has risen from $10 in 1967 to $12.20.

For more information, see: Bureau of Labor Statistics, *Consumer Price Index, Concepts and Content over the Years,* BLS Report 517, Washington, U.S. Government Printing Office, May 1978.

Employment and Earnings

The Division of Industry Employment Statistics and the Division of Employment and Unemployment Analysis of the Bureau of Labor Statistics (BLS) publish data on employment and earnings. The data are collected by the Bureau of the Census, State Employment Security Agencies, and State Departments of Labor in cooperation with BLS.

The major data source is the Current Population Survey (CPS), a household interview survey conducted monthly by the Bureau of the Census to collect labor force data for BLS. CPS is described separately in this appendix. Data based on establishment records are also compiled each month from mail questionnaires by BLS, in cooperation with State agencies.

For more information, see: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings, January 1981,* Vol. 28, No. 1, Washington, U.S. Government Printing Office, Jan. 1981.

ENVIRONMENTAL PROTECTION AGENCY

National Aerometric Surveillance Network

The Environmental Protection Agency (EPA), through extensive monitoring of activities conducted by Federal, State, and local air pollution control agencies, collects data on the five pollutants for which National Ambient Air Quality Standards have been set. These pollution control agencies submit data quarterly to EPA's National Aerometric Data Bank (NADB). There are about 3,400 total stations reporting. Data from some short-term or sporadic monitoring for such purposes as special studies and complaint investigations are usually not included in NADB because the data are not extensive enough to provide equitable comparisons with routine data from permanent monitoring sites.

For more information, see: Environmental Protection Agency, *National Air Pollutant Emission Estimates, 1970-79,* EPA-450/4-80-002, Research Triangle Park, N.C., to be published, or write to Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, N.C. 27711.

UNITED NATIONS

Demographic Yearbook

The Statistical Office of the United Nations prepares the *Demographic Yearbook,* a comprehensive collection of international demographic statistics.

Questionnaires are sent annually and monthly to more than 220 national statistical services and other appropriate government offices. Data forwarded on these questionnaires are supplemented, to the extent possible, by data taken from official national publications and by correspondence with the national statistical services. To insure comparability, rates, ratios, and percentages have been calculated in the Statistical Office of the United Nations.

Lack of international comparability between estimates arises from differences in concepts, definitions, and time of data collection. The comparability of population data is affected by several factors, including (1) the definitions of the total population, (2) the definitions used to classify the population into its urban and rural components, (3) difficulties relating to age reporting, (4) the extent of over-or under-enumeration, and (5) the quality of population estimates. The completeness and accuracy of vital statistics data also vary from one country to another. Differences in statistical definitions of vital events may also influence comparability.

For more information, see: United Nations, *Demographic Yearbook 1978,* Pub. No. ST/ESA/STAT/SER.R/7, United Nations, New York, N.Y., 1979.

World Health Organization

World Health Statistics Annual

The World Health Organization (WHO) is one of the specialized agencies of the United Nations. WHO publishes the *World Health Statistics Annual* each year. This publication is the result of a joint effort by the national health and statistical administrations of many countries, the Statistical Office of the United Nations, and the World Health Organization. It is published in three volumes: Volume I-Vital Statistics and Causes of Death; Volume II-Infectious Diseases, Cases and Deaths; Volume III-Health Personnel and Hospital Establishments.

Data in the *World Health Statistics Annual* are provided by national administrators in answer to questionnaires, or they are obtained from annual national publications. Some of the data are reprinted from the *Demographic Yearbook*.

In many cases, complete comparability of data between countries is not possible. Differences in the definition of a hospital may occur. The level of general education and professional training of health personnel may vary from country to country. Completeness of coverage also varies. Noncomparability of diagnostic coding of data can also occur.

For more information, see: *World Health Organization, World Health Statistics Annual, 1980,* Vols. I, II, III, Geneva, Switzerland, World Health Organization, 1980.

ALAN GUTTMACHER INSTITUTE

Abortion Survey

The Alan Guttmacher Institute (AGI) conducts an annual survey of abortion providers. Data are collected from hospitals, nonhospital clinics, and physicians identified as providers of abortion services. A survey universe of 3,092 hospitals, nonhospital clinics, and individual physicians was compiled. To assess the completeness of the provider and abortion counts, supplemental surveys were conducted of a sample of obstetrician-gynecologists and a sample of hospitals (not in original universe) that were identified as providing abortion services through the American Hospital Association Survey.

The number of abortions estimated by AGI is about 22 percent more than the number reported to the Center for Disease Control.

For more information, write to: The Alan Guttmacher Institute, 515 Madison Avenue, New York, N.Y. 10022.

AMERICAN DENTAL ASSOCIATION

Survey of Dental Practice

This survey has been conducted every 2 or 3 years since 1950 to gather data on various characteristics of dentists and their practices. The 1977 survey was a stratified systematic sample. The stratifying variables were type of practice, geographic distribution by region and State, and year of graduation from dental school. A six-percent sample of the 101,261 practicing dentists listed in the American Dental Association (ADA) registry were mailed survey questionnaires. A followup was conducted by telephone, requesting nonrespondents to return the original questionnaire. The response rate in 1977 was about 46.5 percent of the total sample (adjusted to eliminate persons who should not have been included in the original sample). Because specialists were oversampled, a weighting factor was applied to each survey response.

For more information on the ADA Survey of Dental Practice, see: American Dental Association, *The 1977 Survey of Dental Practice*, Chicago, 1978.

AMERICAN HOSPITAL ASSOCIATION

Annual Survey of Hospitals

Data from this survey are based on questionnaires that are sent to all hospitals in the United States and its associated areas accepted for registration by the American Hospital Association (AHA). In 1979, questionnaires were mailed to 7,060 registered hospitals. Of these, 6,988 hospitals were located in the 50 States and the District of Columbia, and 72 were located in the U.S. possessions. Overall, 6,342 hospitals reported data, a response rate of 89.8 percent. For nonreporting hospitals and for the survey questionnaires of reporting hospitals on which some information was missing, estimates were made for all data except those on bassinets and facilities. The estimates of the missing data were based on data furnished by reporting hospitals that were similar in terms of bed-size category, type of control, major type of service provided, and type of stay in the hospitals for which data were not reported.

Hospitals are requested to report data for the full year ending September 30. More than half of the responding hospitals used this reporting period in the 1979 survey. The remaining hospitals used various reporting periods.

For more information on the AHA Annual Survey of Hospitals, see: American Hospital Association, *Hospital Statistics, 1980 Edition, Data from the American Hospital Association 1979 Annual Survey,* Chicago, 1980.

AMERICAN MEDICAL ASSOCIATION

Physician Masterfile

A masterfile of physicians has been maintained by the American Medical Association (AMA) since 1906. Today, the Physician Masterfile contains data on almost every physician in the United States, both members and nonmembers of AMA, and on those graduates of American medical schools temporarily practicing overseas. The file also includes graduates of foreign medical schools who are in the United States.

A file is initiated on each individual upon entry into medical school or, in the case of foreign graduates, upon entry into the United States. A census of physicians is conducted every 3 years to update the file information on professional activities, specialization, and present employment status. The last census from which data are available was conducted in 1977. Between censuses, AMA keeps the file current by continuous checks of professional publications and State licensure notices for changes in any physician's activities. When a change is noted, the physician is sent another copy of the questionnaire. In 1976, approximately 3,600 of these questionnaires were mailed per week. The general response rate to the questionnaires is about 87 percent.

For more information on the AMA Physician Masterfile, see: Department of Statistical Analysis, American Medical Association, *Physician Distribution and Medical Licensure in the U.S., 1979,* Chicago, 1981.

Annual Census of Hospitals

From 1920 to 1953, the Council on Medical Education and Hospitals of the American Medical Association (AMA) conducted annual censuses of all hospitals registered by AMA.

In each annual census, questionnaires were sent to hospitals asking for the number of beds, bassinets, births, patients admitted, average census of patients, lists of staff doctors and interns, and other information of importance at the particular time. Response rates were always nearly 100 percent.

The community hospital data from 1940 and 1950 presented in this report were calculated using published figures from the AMA Annual Census of Hospitals. Although the hospital classification scheme used by AMA in published reports is not strictly comparable with the definition of community hospitals, methods were employed to achieve the greatest comparability possible.

For more information on the AMA Annual Census of Hospitals, see: American Medical Association, Hospital Service in the United States, *Journal of the American Medical Association,* 11(116):1055-1144, 1940.

APPENDIX II: Glossary of Terms

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Contents

General Terms

Social and Demographic Terms 239

Geographic Terms 240

Health Status and Determinants

Fertility 241

Mortality 241

Determinants and Measures of Health 242

Utilization and Resources

Ambulatory Care 243

Inpatient Care 244

Psychiatric Care 245

Manpower 246

Health Expenditures 247

Appendix II: Glossary of Terms

General Terms

Social and Demographic Terms

Age.—Age is reported as age at last birthday, i.e., age in completed years, often calculated by subtracting date of birth from the reference date, with the reference date being the date of the examination, interview, or other contact with an individual.

Age adjusment of death rates.—Age adjustment, using the direct method, is the application of the age-specific death rates in a population of interest to a standardized age distribution in order to eliminate the differences in observed rates that result from age differences in population composition. This is usually done when comparing two or more populations at one point in time, or one population at two or more points in time.

In this report, the mortality rates are age adjusted to the U.S. population enumerated in 1940. Adjustment is based on 11 age intervals as follows: under 1 year, 1-4 years, 5-14 years, 15-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65-74 years, 75-84 years, and 85 years and over. The data from the National Health Interview Survey, National Ambulatory Medical Care Survey, and the National Hospital Discharge Survey are age adjusted to the 1970 civilian noninstitutionalized population. In these cases, adjustment is based on four age intervals. For the National Health Interview Survey, those intervals are: under 17 years, 17-44 years, 45-64 years, and 65 years and over. For the National Ambulatory Medical Care Survey and National Hospital Discharge Survey, they are: under 15 years, 15-44 years, 45-64 years, and 65 years and over.

Average annual rate of change (percent change).—In this report, average annual rates of change or growth rates are calculated as follows:

$$\left(\sqrt[N]{\frac{P_n}{P_o}} - 1 \right) \times 100$$

where P_n = later time period
P_o = earlier time period
and N = number of years in interval

This geometric rate of change assumes that a variable increases or decreases at the same rate during each year between the two time periods.

Race.—Beginning in 1976, the Federal Government's data systems classified individuals into the following racial groups: American Indian or Alaskan Native, Asian or Pacific Islander, black, and white. In this report, three racial categories are generally used: "white," "black," and "all other." When the "all other" category is used, it includes all races other than white.

Depending on the data source, the classification by race may be based on self-classification or on observation by an interviewer or other persons filling out the questionnaire. In the national vital registration system, newborn infants are assigned the race of their parents. If the parents are of different races and one is white, the child is assigned the other parent's race. If either parent is Hawaiian, the child is classifed as Hawaiian. In all other cases, the child is assigned the father's race. Prior to 1964, the national vital registration system classified all births for which race was unknown as "white." The National Health Interview Survey assigns children whose parents are of different races to the race of the father.

Family income.—For purposes of the National Health Interview Survey and National Health and Nutrition Examination Survey, all people within a household related to each other by blood, marriage, or adoption constitute a family. Each member of a family is classified according to the total income of the family of which he is a member. Unrelated individuals are classified according to their own income. Family income, then, is the total income received by the members of a family (or by an unrelated individual) in the 12 months prior to interview, including wages, salaries, rents from property, interest, dividends, profits, and fees from their own business, pensions, and help from relatives.

Marital status.—The population is classified through self-reporting into the categories married and unmarried. Married includes all married people including those separated from their spouses. Unmarried includes those who are single (never married), divorced, or widowed. The National Survey of Family Growth generally includes women who are living in informal unions under the currently married category. The Abortion Surveillance reports of the Center for Disease Control classify separated people as unmarried for all States except Rhode Island.

Population.—The U.S. Bureau of the Census collects and publishes data on several different types of population in the United States. Various statistical systems then use the appropriate population in calculating rates.

Total population is the population of the United States, including all members of the Armed Forces living in foreign countries, Puerto Rico, Guam, and the U.S. Virgin Islands. Other Americans abroad (e.g., civilian Federal employees and dependents of members of the Armed Forces or other Federal employees) are not included.

Resident population is the population living in the United States. This includes members of the Armed Forces stationed in the United States and their families as well as foreigners working or studying here; it excludes foreign military, naval, and diplomatic personnel and their families located here and residing in embassies or similar quarters as well as Americans living abroad. The resident population is often the denominator when calculating birth and death rates and incidence of disease.

Civilian population is the resident population excluding members of the Armed Forces. Families of members of the Armed Forces are included, however.

Civilian noninstitutionalized population is the civilian population not residing in institutions. Institutions include correctional institutions, detention homes, and training schools for juvenile delinquents; homes for the aged and dependent (e.g., nursing homes and convalescent homes); homes for dependent and neglected children; homes and schools for the mentally or physically handicapped; homes for unwed mothers; psychiatric, tuberculosis, and chronic disease hospitals and residential treatment centers. This population is the denominator in rates calculated for the National Center for Health Statistics' National Health Interview Survey, National Health and Nutrition Examination Survey, National Hospital Discharge Survey, and National Ambulatory Medical Care Survey.

Poverty level.—As used in the National Survey of Family Growth, poverty level is calculated by dividing the total family income by the weighted average threshold income of nonfarm families with the head under 65 years of age based on the poverty levels shown in U.S. Bureau of the Census *Current Population Reports,* Series P-60, No. 106, "Money Income in 1975 of Families and Persons in the United States," table A-3 (for Cycle II), and No. 98, "Characteristics of the Low-Income Population, 1973," table A-3 (for Cycle I). This definition takes into account the sex of the family head and the number of persons in the family. Total family income includes income from all sources for all members of the respondent's family.

Geographic Terms

Division and region.—The 50 States and the District of Columbia are grouped for statistical purposes by the U.S. Bureau of the Census into nine divisions within four regions. The groupings are as follows:

NORTHEAST
- New England
  - Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
- Middle Atlantic
  - New York, New Jersey, Pennsylvania

NORTH CENTRAL
- East North Central
  - Michigan, Wisconsin, Ohio, Indiana, Illinois
- West North Central
  - Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

SOUTH
- South Atlantic
  - Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
- East South Central
  - Kentucky, Tennessee, Alabama, Mississippi
- West South Central
  - Arkansas, Louisiana, Oklahoma, Texas

WEST
- Mountain
  - Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
- Pacific
  - Washington, Oregon, California, Alaska, Hawaii

Level of urbanization.—Counties are classified in a Department of Agriculture system. Metropolitan counties are classified according to the size of the metropolitan area of which they are a part. Nonmetropolitan counties are classified by their number of urban residents and proximity to a metropolitan area. The county classifications are as follows:

- *Within SMSA* refers to metropolitan counties (see "Standard Metropolitan Statistical Areas").
  - *Large SMSA* refers to a county within an SMSA of at least 1 million population.
    - *Core* refers to counties containing the primary central city of an SMSA.
    - *Fringe* refers to suburban counties of an SMSA.
  - *Medium SMSA* refers to a county within an SMSA of 250,000 to 999,999 population.

Other SMSA refers to a county within an SMSA of less than 250,000 population.

Outside SMSA refers to nonmetropolitan counties.

Adjacent to SMSA refers to a county contiguous to an SMSA.

Urbanized refers to a county contiguous to an SMSA and having an aggregate urban population of at least 20,000.

Less urbanized refers to a county contiguous to an SMSA and having an aggregate urban population of 2,500 to 19,999.

Thinly populated refers to a county contiguous to an SMSA and having no urban population.

Not adjacent to SMSA refers to a county not contiguous to SMSA.

Urbanized refers to a county not contiguous to an SMSA and having an aggregate urban population of at least 20,000.

Less Urbanized refers to a county not contiguous to an SMSA and having an aggregate urban population of 2,500 to 19,999.

Thinly populated refers to a county not contiguous to an SMSA and having no urban population.

Metropolitan.—Any county within a standard metropolitan statistical area is metropolitan. Other counties are *nonmetropolitan.*

Registration area.—The United States has separate registration areas for birth, death, marriage, and divorce statistics, which collect data annually from States whose registration data are at least 90-percent complete.

The *death registration area* was established in 1900 with 10 States and the District of Columbia, while the *birth registration area* was established in 1915, also with 10 States and the District of Columbia. Both areas have covered the entire United States since 1933. Currently, Puerto Rico, the U.S. Virgin Islands, and Guam are also included, although in statistical tabulations they are not part of the "United States" total.

Reporting area.—In the national vital registration system, reporting requirements on birth certificates vary according to State. Thus, different numbers of States report various characteristics. For example, in 1977, births to unmarried women are reported on the birth certificate only in 37 States and the District of Columbia, and the month during which prenatal care began is reported in 44 States and the District of Columbia.

Standard metropolitan statistical area (SMSA).—This is a concept developed for use in statistical reporting and analysis. Except in the New England States, an SMSA is a county or a group of contiguous counties containing at least one city of 50,000 inhabitants or more or "twin cities" with a combined population of at least 50,000. In addition, contiguous counties are included in an SMSA if they are essentially metropolitan in character (based on criteria of labor force characteristics and population density) and are socially and economically integrated with the central city or cities.

In New England, towns and cities rather than counties are the geographic components of the SMSA. Since National Center for Health Statistics (NCHS) data are not coded to identify all towns, NCHS uses the metropolitan State economic area (MSEA), which is made up of county units, for reporting data in New England.

Health Status and Determinants

Fertility

Abortion.—The Center for Disease Control's surveillance program counts *legal abortions* only. What constitutes a legal abortion varies, depending on a State's regulations about when one may be performed.

Birth rate.—This measure divides the number of live births in a population in a given period by the resident population at the middle of that period. The rate may be restricted to births to women of specific age, race, marital status, or geographic location, or it may be related to the entire population.

Gestation.—For both the national vital registration system and the Center for Disease Control's Abortion Surveillance, the period of gestation is defined as beginning with the first day of the last normal menstrual period and ending with the day of birth.

Live birth.—In the World Health Organization's definition, also adopted by the United Nations and the National Center for Health Statistics, a live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as heartbeat, umbilical cord pulsation, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born.

Live-birth order.—In the national vital registration system, this item from the birth certificate indicates the number of live births a woman has had, counting the birth being recorded.

Mortality

Cause of death.—For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on information reported on the death certificate, and utilizing the international rules for selecting the underlying cause of death from the reported conditions. For data years 1968-78, the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* is used for coding. Earlier data used the then current revision of the International Classification of Diseases. For 1979, the *Ninth Revision* is used.

Death rate.—This measure divides the number of deaths in a population in a given period by the resident population at the middle of that period. It may be restricted to deaths in specific age, race, sex, or geographic groups, or it may be related to the entire population.

Eighth Revision International Classification of Diseases, Adapted for Use in the United States (ICDA).—ICDA and the *International Classification of Diseases* (ICD), upon which ICDA is based, classify morbidity and mortality information for statistical purposes. Both are arranged in 17 main sections. Most of the diseases are arranged according to their principal anatomical site, with special sections for infective and parasitic diseases; neoplasms; endocrine, metabolic, and nutritional diseases; mental diseases; complications of pregnancy and childbirth; certain diseases peculiar to the perinatal period; and ill-defined conditions. Separate sections provide a classification of injuries according to the external cause giving rise to the injury, usually used for cause-of-death categories, and a classification according to the nature of injury (such as puncture, open wound, or burn), usually used for morbidity categories. Supplementary sections in ICDA on special conditions and examinations without sickness (Y00-Y13) and on surgical operations and diagnostic and other therapeutic procedures are used for coding information on ambulatory and inpatient utilization.

ICD was first used in 1900 and has been revised about every 10 years since then. The *Ninth Revision,* introduced in 1977, is used to code U.S. mortality data beginning with 1979. A modification of the *Ninth Revision* has been prepared for use with U.S. morbidity data. Only two tables in this volume (tables 40 and 43) include data using *Ninth Revision* codes.

Infant mortality.—Infant mortality is the death of liveborn children who have not reached their first birthday and is usually expressed as a rate (i.e., the number of infant deaths during a year per 1,000 live births reported in the year).

Neonatal mortality.—The neonatal mortality rate is the number of deaths under 28 days of age per 1,000 live births.

Postneonatal mortality.—The postneonatal mortality rate is the number of deaths that occur from 28 days to 365 days after birth per 1,000 live births.

Fetal death.—The fetal death rate is the number of fetal deaths with stated or presumed gestation of 20 weeks or more per 1,000 total births (i.e., live births plus fetal deaths).

Life expectancy.—Life expectancy is the average number of years of life remaining to a person at a particular age and is based on a given set of age-specific death rates, generally the mortality conditions existing in the period mentioned. Life expectancy may be determined by race, sex, or other characteristics using age-specific death rates for the population with that characteristic.

Determinants and Measures of Health

Condition.—A health condition is a departure from a state of physical or mental well-being. Conditions, except impairments, are coded according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA).

Based on duration, there are two categories of conditions, acute and chronic. In the National Health Interview Survey, an *acute condition* is a condition which has lasted less than 3 months and has involved either a physician visit (medical attention) or restricted activity. The category includes respiratory conditions (ICDA codes 460-486, 501, 508-516, 519, 783), injuries (ICDA codes N800-N870, N872-N884, N890-N894, N900-N994, N996-N999), infective and parasitic conditions (ICDA codes 000-136), and digestive conditions (ICDA codes 520.6-521.5, 521.7-523.9, 525-530, 535-543, 560-561, 564-577, 784-785). In the National Health Interview Survey, a *chronic condition* is any condition lasting 3 months or more or is one of certain conditions classified as chronic regardless of their time of onset. The National Nursing Home Survey uses a specific list of conditions classified as chronic, also disregarding time of onset.

Disability.—Disability is any temporary or long-term reduction of a person's activity as a result of an acute or chronic condition. It is often measured in terms of the number of days that a person's activity has been reduced.

Disability day.—The National Health Interview Survey identifies several types of days on which a person's usual activity is reduced because of illness or injury (reported for the 2-week period preceding the week of the interview). These short-term disability days are not mutually exclusive categories but are defined as follows:

> A *restricted-activity day* is any day on which a person cuts down on his or her usual activities for all or most of that day because of an illness or an injury. Restricted-activity days are unduplicated counts of bed-disability, work-loss, and school-loss days as well as other days during which a person cuts down on his or her usual activities.
>
> A *bed-disability day* is a day on which a person stays in bed for more than half of the daylight hours (or normal waking hours) because of a specific illness or injury. All *hospital days* are bed-disability days. Bed-disability days may also be work-loss or school-loss days.
>
> A *work-loss day* is a day on which a person did not work at his or her job or business for at least half of his or her normal workday because of a specific illness or injury. The number of work-loss days is determined only for currently employed persons.
>
> A *school-loss day* is a day on which a child did not attend school for at least half of his or her normal schoolday because of a specific illness or injury. School-loss days are determined only for children 6–16 years of age.

Former smoker.—Any person who has smoked at least 100 cigarettes during his or her entire life but who reports smoking no cigarettes at the present time is a former smoker.

Incidence.—Incidence is the number of cases of disease having their onset during a prescribed period of time and is often expressed as a rate (e.g., the incidence of measles per 1,000 children 5-15 years of age during a year). Incidence is a measure of morbidity or other events that occur within a specified period of time.

Limitation of activity.—Each person identified by the National Health Interview Survey as having a chronic condition is classified according to the extent to which his or her activities are limited because of the condition as follows:

- Persons unable to carry on *major activity.*
- Persons limited in the amount or kind of major activity performed.
- Persons not limited in major activity but otherwise limited.
- Persons not limited in activity.

Major activity (or *usual activity).*—This is the principal activity of a person or of his or her age-sex group. For 1-5 years of age, it refers to ordinary play with other children; for 6-16 years of age, it refers to school attendance; for 17 years of age and over, it usually refers to a job, housework, or school attendance.

Notifiable disease.—A notifiable disease is one that health providers are required, usually by law, to report to Federal, State, or local public health officials when diagnosed. Notifiable diseases are those of public interest by reason of their contagiousness, severity, or frequency.

Particulate matter.—Particulate matter is defined as particles of solid or liquid matter in the air, including both nontoxic materials (soot, dust, and dirt) and toxic materials (lead, asbestos, suspended sulfates and nitrates, etc.).

Pollutant.—A pollutant is any substance that renders the atmosphere or water foul or noxious to health.

Prevalence.—Prevalence is the number of cases of a disease, infected persons, or persons with some other attribute present during a particular interval of time. It is often expressed as a rate (e.g., the prevalence of diabetes per 1,000 persons during a year).

Self-assesssment of health.—the National Health Interview Survey, the respondents are asked to evaluate the health of everyone in their household compared with other people of the same age.

Utilization and Resources

Ambulatory Care

Dental visit.—The National Health Interview Survey counts visits to a dentist's office for treatment or advice, including services by a technician or hygienist acting under the dentist's supervision, as dental visits. Services provided to hospital inpatients are not included.

Disposition of visit.—As used by the National Ambulatory Medical Care Survey, this term describes the variety of followup procedures that a physician may plan for the patient, ranging from no followup to specific return contacts, to referral to other providers of care.

Eighth Revision International Classification of Diseases, Adapted for Use in the United States.—See "Mortality" section.

Family planning visit.—In the National Survey of Family Growth, women are considered to have made a family planning visit if they answer affirmatively when asked if they have talked to a doctor or other trained medical personnel about a method for delaying or preventing pregnancy. Those who have such visits are asked the date of the visit.

Office.—In the National Health Interview Survey, an office refers to the office of any physician in private practice, including physicians connected with prepaid group practices. In the National Ambulatory Medical Care Survey, an office is any location for a physician's ambulatory practice other than hospitals, nursing homes, other extended care facilities, patients' homes, and industrial clinics. However, private offices in hospitals are included.

Physician visit.—The National Health Interview Survey counts as a physician visit a visit in person or by telephone to a doctor of medicine or doctor of osteopathy for the purpose of examination, diagnosis, treatment, or advice. The service may be provided directly by the physician or by a nurse or other person acting under the physician's supervision. Contacts involving services provided on a mass basis are not included, nor are contacts for hospital inpatients.

Physician visits are generally classified by the type of place of visit. In the National Health Interview Survey, this includes the *office, hospital outpatient clinic* or *emergency room, telephone* (advice given by a physician in a telephone call), *company or industrial clinic* (units at a place of business that provide treatment through a physician or trained nurse), *home* (any place in which a person was staying at the time a physician was called there), as well as other places.

In the National Ambulatory Medical Care Survey, an *office visit* is any direct personal exchange between an ambulatory patient and a physician, or members of his or her staff, for the purposes of seeking care and rendering health services.

Place of last family planning visit.—Women with a family planning visit in the last 3 years are asked where the last (most recent) visit took place. "Own physician" includes visits of the respondent with her own physician, whether in the physician's office or in a hospital; it includes group practices and prepaid medical organizations. "Organized medical services" includes visits to all other places: general clinics, family planning clinics, hospitals, or elsewhere.

Principal diagnosis.—In the National Ambulatory Medical Care Survey, this is the physician's diagnosis of the patient's most important problem or complaint as evaluated at the time of the visit.

Seriousness of problem.—In the National Ambulatory Medical Care Survey, the physician indicates for each patient visit the seriousness of the problem, condition, or symptom which the patient says caused the visit. Seriousness refers to the physician's clinical judgment as to the extent the patient would be impaired if no care were given. It is expressed as very serious, serious, slightly serious, or not serious.

Inpatient Care

Average daily census or *average daily patients.*—This refers to the average number of inpatients receiving care each day during a reporting period, excluding newborns.

Average length of stay.—In the National Hospital Discharge Survey, the average length of stay is the total number of patient days accumulated at the time of discharge, counting the date of admission but not the date of discharge by patients discharged during a reporting period, divided by the number of patients discharged.

As measured in the National Nursing Home Survey, *length of stay for residents* is the time from their admission until the reporting time, while the *length of stay for discharges* is the time between the date of admission and the date of discharge.

Bed.—Any bed that is set up and staffed for use for inpatients is counted as a bed in a facility. In the National Master Facility Inventory, the count is of beds at the end of the reporting period; for the American Hospital Association, it is of the average number of beds during the entire period. The World Health Organization defines a hospital bed as one regularly maintained and staffed for the accommodation and full-time care of a succession of inpatients and situated in a part of the hospital where continuous medical care for inpatients is provided.

Day.—According to the American Hospital Association and National Master Facility Inventory, days or *inpatient days* are the number of adult and pediatric days of care rendered during a reporting period. Days of care for newborns are excluded.

In the National Health Interview Survey, *hospital days during the year* refer to the total number of hospital days occurring in the 12-month period prior to the interview week. A *hospital day* is a night spent in the hospital for persons admitted as inpatients to a hospital.

In the National Hospital Discharge Survey, *days of care* refer to the total number of patient days accumulated by patients at the time of discharge from non-Federal short-stay hospitals during a reporting period. All days from and including the date of admission to, but not including the date of discharge, are counted. A *patient* is a person who is formally admitted to the inpatient service of the hospital for observation, care, diagnosis, or treatment.

Discharge.—The National Health Interview Survey defines a *hospital discharge* as the completion of any continuous period of stay of 1 night or more in a hospital as an inpatient, excepting the period of stay of a well newborn infant.

According to the National Hospital Discharge Survey, American Hospital Association, and National Master Facility Inventory, this is the formal release of an inpatient by a hospital, i.e., the termination of a period of hospitalization (including stays of 0 nights) by death or by disposition to a place of residence, nursing home, or another hospital. In this report, newborn infants are excluded.

In the National Nursing Home Survey, this is the formal release of a resident by a nursing home.

First-listed diagnosis.—In the National Hospital Discharge Survey, this is the diagnosis listed first on the face sheet of the medical record.

Hospital.—According to the American Hospital Association (AHA) and National Master Facility Inventory (NMFI), hospitals are institutions licensed as hospitals whose primary function is to provide diagnostic and therapeutic patient services for medical conditions and which have at least six beds, an organized physician staff, and continuous nursing services under the supervision of registered nurses. AHA data differ slightly from those of NMFI, since data from NMFI reflect osteopathic hospitals as well as hospitals not registered with AHA. Non-AHA hospitals comprise 5-10 percent of all hospitals in the country. The World Health Organization considers an establishment a hospital if it is permanently staffed by at least one physician, can offer inpatient accommodation, and can provide active medical and nursing care.

Hospitals may be classified by type of service, ownership, and length of stay.

> *General hospitals* provide both diagnostic and treatment services for patients with a variety of medical conditions, both surgical and nonsurgical. According to the World Health Organization, these are hospitals that provide medical and nursing care for more than one category of medical discipline (e.g., general medicine, specialized medicine, general surgery, specialized surgery, obstetrics, etc.); excluded are hospitals, usually ones in rural areas, which provide a more limited range of care.
>
> *Psychiatric hospitals* are ones whose major type of service is psychiatric care. See "Psychiatric Care" section.
>
> *Specialty hospitals,* such as psychiatric, tuberculosis, chronic disease, rehabilitation, maternity, and alcoholic or narcotic, provide a particular type of service to the majority of their patients.
>
> *Federal hospitals* are operated by the Federal Government.
>
> *Non-Federal government hospitals* are operated by State or local governments.
>
> *Voluntary nonprofit hospitals* are operated by a church or other nonprofit organization.

Proprietary hospitals are operated by individuals, partnerships, or corporations for profit.

Short-stay hospitals in the National Hospital Discharge Survey are those in which the average length of stay is less than 30 days. The American Hospital Association and National Master Facility Inventory define *short-term hospitals* as hospitals in which more than half the patients are admitted to units with an average length of stay of less than 30 days and *long-term hospitals* as ones in which more than half the patients are admitted to units with an average length of stay of 30 days or more. The National Health Interview Survey defines *short-stay hospitals* as any hospital or hospital department in which the type of service provided is general; maternity; eye, ear, nose, and throat; children's; or osteopathic.

Nursing care.—Nursing care is the provision of any of the following services: application of dressings or band-ages; bowel and bladder retraining; catheterization; enema; full bed bath; hypodermic, intramuscular, or intravenous injection; irrigation; nasal feeding; oxygen therapy; and temperature-pulse-respiration or blood pressure measurement.

Nursing home.—No uniform definition is possible, because the minimum standards and regulations for nursing homes vary among the States. However, the National Master Facility Inventory includes in its count only facilities licensed by the States in which they are located. The homes are then classified according to the level of care they provide, as follows:

Nursing care homes must employ one or more full-time registered or licensed practical nurses and must provide nursing care to at least half the residents.

Personal care homes with nursing have some but fewer than half the residents receiving nursing care. In addition, such homes must employ one or more registered or licensed practical nurses or must provide administration of medications and treatments in accordance with physicians' orders, supervision of self-administered medications, or three or more personal services.

Personal care homes without nursing have no residents receiving nursing care. These homes provide administration of medications and treatments in accordance with physicians' orders, supervision of self-administered medications, or three or more personal services.

Domiciliary care homes primarily provide domiciliary care, but also provide one or two personal services.

In the 1977 National Nursing Home Survey, all four categories of homes were included. In the 1973-74 survey, only nursing homes providing some level of nursing care were classified as nursing homes.

Skilled nursing facilities provide the most intensive nursing care available outside of a hospital. Facilities certified by Medicare provide posthospital care to eligible Medicare enrollees. Facilities certified by Medicaid as skilled nursing facilities provide skilled nursing services on a daily basis to individuals eligible for Medicaid benefits.

Intermediate care facilities are certified by the Medicaid program to provide health-related services on a regular basis to Medicaid eligibles who do not require hospital or skilled nursing facility care, but do require institutional care above the level of room and board.

Occupancy rate.—The National Master Facility Inventory and American Hospital Association define *hospital occupancy rate* as the average daily census divided by the number of hospital beds during a reporting period. The *occupancy rate for other facilities* is calculated as the number of residents reported at the time of the interview divided by the number of beds reported.

Outpatient visit.—According to the American Hospital Association, these are visits by patients not lodged in the hospital for medical, dental, or other services. See "Ambulatory Care" section.

Primary diagnosis.—In the National Nursing Home Survey, this is the primary condition at the last examination as extracted from the resident's medical record.

Resident.—In the National Nursing Home Survey, a resident is a person who has been formally admitted to but not discharged from an establishment.

Psychiatric Care[1]

Addition.—An individual is classified as an addition to a psychiatric facility by being a new admission, a readmission, or a return from leave to either an inpatient or an outpatient psychiatric facility.

Mental disorder.—A mental disorder is any of several disorders listed in Section V of the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA).

Mental health facility.—A mental health facility is an administratively distinct public or private agency or institution whose primary concern is the provision of direct mental health services to the mentally ill or emotionally disturbed. Facilities include public and private psychiatric hospitals, psychiatric units of general hospitals, residential treatment centers (for emotionally disturbed children), federally funded community mental health center, freestanding outpatient psychiatric clinics, multiservice mental health facilities, and halfway houses.

Psychiatric hospitals are hospitals primarily concerned with providing inpatient care and treatment for the mentally ill. *Psychiatric inpatient units of Veterans Administration general hospitals* and *Veterans Administration neuropsychiatric hospitals* are often combined into the category *Veterans Administration psychiatric hospitals* because of their similarity in size, operation, and length of stay. Other psychiatric hospitals include State and county mental hospitals and private mental hospitals.

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[1] The definitions for psychiatric care are those used by the National Institute of Mental Health.

General hospitals providing psychiatric services are hospitals that knowingly and routinely admit patients to a separate psychiatric unit for the purpose of diagnosing and treating psychiatric illness.

Residential treatment centers (for emotionally disturbed children) are residential institutions primarily serving emotionally disturbed children and providing treatment services, usually under the supervision of a psychiatrist.

Federally funded community mental health centers are legal entities through which comprehensive mental health services are provided to a delineated catchment area. This mental health delivery system may be implemented by a single facility (with or without subunits) or by a group of affiliated facilities which make available at least the following essential mental health services: inpatient, day treatment, outpatient, emergency care, and community consultation and education.

Freestanding outpatient psychiatric clinics are administratively distinct facilities, the primary purpose of which is to provide nonresidential mental health service, and where a psychiatrist assumes medical responsibility for all patients and/or directs the mental health program.

Service mode.—Service mode and *treatment modality* refer generally to the kinds of mental health service available: inpatient care, outpatient care, day treatment, etc.

Inpatient care is the provision of mental health treatment to people requiring 24-hour supervision.

Outpatient care is the provision of mental health treatment on an outpatient basis and does not involve any overnight stay in an inpatient facility.

Day treatment is the provision of a planned therapeutic program during most or all of the day for people needing broader programs than are possible through outpatient visits but who do not require full-time hospitalization.

Manpower

Full-time equivalent employee (FTE).—The American Hospital Association and National Master Facility Inventory use an estimate of full-time equivalent employees that counts two part-time employees as one full-time employee, a *full-time employee* being someone working 35 hours a week or more. The National Nursing Home Survey uses an estimate of full-time employees that counts 35 hours of part-time employees' work per week as equivalent to one full-time employee.

Group practice.—Group practice is the application of services by three physicians or more who are formally organized to provide medical care, consultation, diagnosis, and/or treatment through the joint use of equipment and personnel and with the income from medical practice distributed in accordance with methods previously determined by members of the group.

Nurse practitioner (NP).—These are specially trained nurses who perform acts of diagnosis, treatment, or prescription which traditionally have been within the exclusive province of the physician. Nurse practitioners function under the supervision of physicians for these medical tasks, but not for their nursing practice.

Physician.—Physicians are licensed doctors of medicine or osteopathy classified by the American Medical Association and others through self-reporting, as follows:

Active physicians or *professionally active physicians* are ones currently practicing, regardless of the number of hours worked per week.

Federal physicians are employed by the Federal Government; *non-Federal* or *civilian physicians* are not.

Fee-for-service group practice physicians have most of their contact with patients in a group practice and none of the care they provide in this practice is on a prepaid basis. Rather, remuneration for the treatment of patients is made by a fee per unit of service provided.

Licensed physicians are authorized to practice in a State. Every State (and the District of Columbia) requires that physicians and dentists be licensed there in order to practice in that State.

Office-based physicians are physicians who spend the plurality of their time working in practices based in private offices; *hospital-based physicians* spend the plurality of their time as salaried physicians in hospitals.

Prepaid group practice physicians have most of their contact with patients in a group practice and all or part of the care they provide in this practice is on a prepaid basis. That is, remuneration for the treatment of some patients is made by a predetermined fee which is not related to the amount of care provided to an individual patient.

Private practice physicians are independent of any external policy control and are self-employed or salaried by a partnership. See also "Professional manpower."

Physician assistant (PA).—These are individuals with appropriate medical training who are authorized to perform medical services under the supervision of a licensed physician. The extent to which these medical services may be delegated to the PA by the physician varies from State to State.

Physician specialty.—A physician specialty is any specific branch of medicine that a physician may concentrate in. The specialty classification used by the Bureau of Health Professions and National Ambulatory Medical Care Survey (NAMCS) follow these American Medical Association categories:

Primary care specialties include general practice (or family practice), internal medicine, and pediatrics.

Medical specialties include, along with internal medicine and pediatrics, the areas of allergy, cardiovascular disease, dermatology, gastroenterology, pediatric allergy and cardiology, and pulmonary diseases.

Surgical specialties include general surgery, neurological surgery, obstetrics and gynecology, ophthalmology, orthopedic surgery, otolaryngology, plastic surgery, colon and rectal surgery, thoracic surgery, and urology. *Other specialties* covered by NAMCS are geriatrics, neurology, preventive medicine, psychiatry, and public health. Other specialties covered by the Bureau of Health Professions are aerospace medicine, anesthesiology, child psychiatry, neurology, occupational medicine, pathology, physical medicine and rehabilitation, psychiatry, public health, and radiology.

Place of employment.—The classification of people employed in the health service industry by place of employment is a U.S. Bureau of the Census adaptation of the U.S. Office of Management and Budget's *Standard Industrial Classification Manual, 1967* which classified people according to health service industry codes 801-809.

Professional manpower.—Professional manpower includes chiropractors, dentists, dental hygienists, licensed practical nurses, pharmacists, physical therapists, physicians, podiatrists, and registered nurses as well as other occupations not covered in this report.

In the United States, counts of these professionals include only those licensed in the State where they practice, with licensure usually requiring the completion of an appropriate degree or certificate program for that profession. In international counts prepared by the World Health Organization, only those professionals active in their profession are counted.

Professionals may be classified according to specialty, place of practice, or other criteria. See "Physician."

Health Expenditures

Consumer Price Index (CPI).—The CPI is prepared by the U.S. Bureau of Labor Statistics. It is a measure of the changes in average prices of the goods and services purchased by urban wage earners and by clerical workers and their families. The medical care component of the CPI shows trends in medical care prices based on specific indicators of hospital, medical, dental, and drug prices.

A recent revision of the CPI has been in use since January 1978, and changes are noted where applicable in this report.

Economic Stabilization Program (ESP).—This Federal program was established to control wages and prices. On August 15, 1971, all wages and prices were frozen for a period of 90 days, and a system of wage and price controls, administered through a cost-of-living council, was implemented. Controls continued, with periodic changes in the flexibility and intensity with which they were enforced, until their legislative authority expired in April 1974.

Gross national product (GNP).—This is the most comprehensive measure of a nation's total output of goods and services. In the United States, the GNP represents the dollar value in current prices of all goods and services produced for sale plus the estimated value of certain imputed outputs (i.e., goods and services that are neither bought nor sold). The GNP is the sum of: (1) consumption expenditures by both individuals and nonprofit organizations, plus certain imputed values; (2) business investment in equipment, inventories, and new construction; (3) Federal, State, and local government purchases of goods and services; and (4) the sale of goods and services abroad minus purchases from abroad.

Health insurance plans.—Health insurance plans are formal plans with defined membership and benefits, designed to pay all or part of the hospital, physician, or other medical expenses of the insured individual. The different types of plans are as follows:

> *Employment-related health insurance* is any type of health insurance benefit provided by a firm for an employee, regardless of who pays the premium.
>
> > *Firm* is any organization or establishment (including for profit, not-for-profit, Federal, State, or local government) that employs one or more persons to provide goods or services.
> >
> > *Employee* is any person, 14 years or older, working for pay for a firm; self-employed persons are not included.
> >
> > *Premium/payroll ratio* is the total annual health insurance premium divided by gross wages and salaries paid by the firm.
>
> *Prepaid group plans* involve physician group practices that provide a comprehensive range of health care services to an enrolled population for a fixed prepaid capitation payment. Prepaid group practice plans are one form of Health Maintenance Organization.

Health Maintenance Organizations (HMO's).—These are public or private organizations that provide a comprehensive range of health care services, either directly or under arrangement with others, to an enrolled population for a fixed prepaid capitation payment.

Medicaid.—This program is federally aided but State operated and administered. It provides medical benefits for certain low-income persons in need of medical care. The program, authorized in 1965 by Title XIX of the Social Security Act, categorically covers participants in the Aid to Families with Dependent Children program as well as some participants in the Supplemental Security Income program and other people deemed medically needy in a participating State. States also determine the benefits covered, rates of payment for providers, and methods of administering the program.

Medicare.—This is a nationwide health insurance program providing health insurance protection to people 65 years of age and over, people eligible for social security disability payments for more than 2 years, and people with end-stage renal disease, regardless of income. The program was enacted July 30, 1965, as Title XVIII, *Health Insurance for the Aged*, of the Social Security Act, and became effective on July 1, 1966. It consists of two separate but coordinated programs: hospital insurance (Part A) and supplementary medical insurance (Part B).

National health expenditures.—This measure estimates the amount spent for all health services and supplies and health-related research and construction activities consumed in the United States during a specified time period. Detailed estimates are available by source of expenditure (e.g., consumer out-of-pocket, private health insurance, and government programs) and by type of expenditure (e.g., hospitals, physicians, and drugs). Data are compiled from a variety of sources that collect data from the providers of care.

Health services and supplies expenditures are outlays for goods and services relating directly to patient care plus expenses for administering health insurance programs and for government public health activities. This category is equivalent to total national health expenditures minus expensitures for research and construction.

Private expenditures are outlays for services provided or paid for by nongovernmental sources—consumers, insurance companies, private industry, and philanthropic organizations.

Public expenditures are outlays for services provided or paid for by Federal, State, and local government agencies or expenditures required by governmental action (such as workmen's compensation insurance payments).

Personal health care expenditures.—These are outlays for goods and services relating directly to patient care. The expenditures in this category are total national health expenditures minus expenditures for research and construction, expenses for administering health insurance programs, and government public health activities.

GUIDE TO TABLES

I. HEALTH STATUS AND DETERMINANTS	Age	Sex	Race	Family income	Location of residence	Other variables	Geographic area		
							Region	Division, State	Inter-national
Fertility									
General	1-3		1-3			2, 3			
Teenagers	4		4						
Abortion	5		5			5, 6			
Contraception	7		7						
Mortality									
General	8	8, 14	8, 14						
Infant			10, 11					11	12
Fetal, perinatal			10						12
Life expectancy	9	9, 13	9						13
Heart disease	15	14, 15	14, 15						
Ischemic heart disease	16	16	16						
Cancer	17	14, 17	14, 17						
Respiratory cancer	18	14, 18	14, 18						
Cerebrovascular disease	19	14, 19	14, 19						
Motor vehicle accident	20	14, 20	14, 20						
Homicide	21	14, 21	14, 21						
Suicide	22	14, 22	14, 22						
Other causes of death		14	14						
Determinants and measures of health									
Prenatal care			24						
Immunization	25		25			25			
Cigarette smoking	30-32	30-32	30, 31						
Air pollution						33			
Self-assessment of health	27	27	27	27	27		27		
Limitation of activity	27	27	27	27	27		27		
Disability days	29								
Restricted-activity days	28	28	28	28	28		28		
Bed-disability days	28	28	28	28	28		28		
Acute conditions	29								
Diseases, notifiable						26			
Birthweight, low			23, 24					23	

GUIDE TO TABLES—Continued

II. UTILIZATION OF HEALTH RESOURCES	Age	Sex	Race	Family income	Location of residence	Other variables	Geographic region
Ambulatory							
All physician visits							
Source or place	34	34	34	34	34		34
Interval since last visit	35	35	35	35	35		35
Physician's office							
Visit characteristics	37	37	37			37	
Physician's specialty	36	36	36				
Dentist visits, interval since last visit	38	38	38	38	38		38
Inpatient Care							
Short-stay hospitals							
Discharges, general	41, 42	42	42	42	42	39, 41	42
Surgery	41, 43	43				41	
Diagnosis	40	40					
Days of care, general	41, 42	42	42	42	42	39, 41	42
Surgery	41					41	
Diagnosis	40	40					
Mental health facilities additions						46	
Nursing homes residents	44, 45	45	45			44	

GUIDE TO TABLES—Continued

III. HEALTH CARE RESOURCES	Occupation or place of employment	Specialty	Type of practice	Other variables	Geographic area	
					Region	Division
Manpower						
Persons active in health field--	47					
Graduates (projections)---------		52				
Physicians						
Total active------------------				48		
Medical doctors---------------		50	49			
Active non-Federal M.D.'s-----		51	51		51	

	Specialty	Type of ownership	Beds	Employees	Outpatient visits	Occupancy rates	Certification	Other variables	Geographic area	
									Region	Division, State
Facilities										
Short-stay hospitals------------	53	53	53							
Long-stay hospitals-------------	58	58	58							
Community hospitals-------------			54	56	57	55				54-57
Nursing homes-------------------			59							59

IV. HEALTH CARE EXPENDITURES	Age	Type of expenditure	Source of funds or payment	Other variables	Geographic region
National health expenditures--------		68, 69	65, 66	60	
Public program expenditures (including Medicare and Medicaid)--	75	75-77			
Personal health care expenditures---	74	74	67, 74	61	
Consumer Price Index----------------		62-64			
Hospital costs and expenses---------				70, 71	
Nursing home charges----------------	73		72	72, 73	72, 73
Health research and development expenditures-----------			78	79	

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